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USSR Report

AGRICULTURE

No. 1279

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MAJOR CROP PROGRESS AND WEATHER REPORTING

DEVELOPMENT OF CROPS IN UKRAINIAN SSR DESCRIBED

Moscow SEL'SKAYA ZHIZN' in Russian 15 Apr 81 p 1

[Article by S. Lurgan, Ukrainian SSR: "Ukrainian Sowing Operations"]

[Text] The first springtime period of the Eleventh Five-Year Plan is moving in a confident manner from south to north throughout the republic. What are the particular features of this year's spring period. First of all, the temperature is rising rapidly, despite the fact that we are still encountering sharp drops in temperature between night and day. The growing season for the winter crops has resumed earlier than the average established over a period of many years. And this holds true not only in the south but also in the northeastern and northwestern regions. There is still one other feature -- the excessive amount of precipitation which fell last autumn moved a portion of the soil nutrients into the lower layers, where they are inaccessible to the root systems of the winter crops. These and other factors are dictating the tactics to be employed out on the fields, tactics based mainly upon creativity. All measures are being undertaken to ensure that each agricultural measure is carried out during the optimum period and in a high quality manner.

Additional sowing is being carried out on those winter crop plantings which sustained losses and some tracts are even being resown. A spring top dressing of mineral fertilizer has been applied to almost all of the winter crops.

This year the Ukrainian farmers have planned high goals for themselves: to obtain on the average 31-32 quintals of grain per hectare, 312 quintals of sugar beets, 142 quintals of potatoes and 156 quintals of vegetables per hectare. In addition, they plan to raise the cropping power of their sunflowers, flax and forage crops. In the interest of realizing their plans, they are persistently introducing into operations progressive agrotechnical methods and technologies. Corn is being grown using the "industrial" method on 1.3 million hectares of the overall area of 2 million hectares. The specialists believe that this alone will make it possible to obtain 5 million additional tons of grain corn. Extensive use is presently being made of a new machine technology for the cultivation of sugar beets, potatoes, spinning flax, soybeans and tomatoes.

The republic's leading workers have vowed to obtain high yields. The well known Trans-Carpathian corn grower and two-times Hero of Socialist Labor Yu. Yu. Nitra is obtaining up to 100 quintals of corn per hectare during all types of weather. His team served as the basis for organizing an oblast school for leading experience, which has been in operation for many years. This eminent corn grower has become a public consultant for all of the mechanized teams in our Irshavskiy Rayon and he himself has resolved to obtain 100 quintals of grain per hectare and to aid others in achieving this same goal.

The republic's feed fields warrant special mention. All areas are relying heavily upon the cultivation of fodder grain crops. In addition to corn, plantings of peas, barley and oats are also being cultivated. Many farms in the southern Ukraine, particularly in Krymskaya, Odesskaya and Khersonskaya Oblasts, have accumulated considerable experience in the cultivation of soybeans. The general opinion is that a strong role must be played by soybeans in solving the protein problem. The plans for the next few years call for the soybean growing areas to be expanded to 300,000 hectares. This spring it will be planted on rather large areas. In Odesskaya Oblast, the machine operators from 180 complex detachments and teams undertook a special training course in the growing of soybeans. They studied in detail the experience of their colleagues from the Progress and Ukraina kolkhozes in the Danube River region, where 27-30 quintals of soybean grain are being obtained from each hectare.

The feed procurement specialists in L'vovskaya Oblast are realizing a sharp change for the better with regard to raising the return from their natural meadow and pasture lands. Here, these lands, which occupy an area of 390,000 hectares, are for the very first time being supplied with fertilizers on the basis of technological plans developed by scientists at the Scientific-Research Institute of Farming and Animal Husbandry for the Western Regions of the Ukrainian SSR, in collaboration with land managers and land reclamation specialists. Leading experience has shown that even under the unfavorable conditions experienced during the Trans-Carpathian summers, a scientifically sound top dressing applied to the soils serves to raise the productivity of the meadows and pastures by a factor of 2-3. For example, a mixture consisting of seven components applied at the Verkhovina Sovkhoz made it possible to obtain 132 quintals of hay per hectare from mountain meadows

The potato growers are commencing their work. Correct measures are being undertaken on the farms in Chernigovskaya Oblast: just as soon as the weather permitted, the rapid sorting of the seed tubers and their warming under the sun's rays were organized here. In those areas where there is a shortage of seed, it is being procured from the population, with the large tubers being cut up. Similar actions are being taken by the potato growers in Zhitomirskaya and Kiyevskaya Oblasts.

According to operational data, the Ukrainian farmers have already applied a top dressing to more than 9 million hectares of winter crops. Early grain crops have been planted on eight out of every 10 hectares of grain crops. Sugar beets have been sown on the initial 300,000 hectares. The soil is being prepared for corn and other late crops. The land reclamation specialists are making preparations for their spring irrigation work. Work on the vegetable plantations and gardens and in the orchards is proceeding at a maximum tempo.

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CSO: 1824/225

MAJOR CROP PROGRESS AND WEATHER REPORTING

OVERVIEW OF USSR FIELD WORK PROGRESS, DEFICIENCIES

Moscow SEL'SKAYA ZHIZN' in Russian 16 Apr 81 p 1

[Article by N. Osychkin: "An Hour of Springtime -- For the Harvest!"]

> [Text] The farmers have many concerns during these April days. Over a vast area -- stretching from the Baltic to the Far East -- field work has commenced. The soil must be prepared rapidly and in a high quality manner, the spring crops must be sown and a strong foundation must be established for the harvest of the first year of the Eleventh Five-Year Plan. The agricultural machine operators are making each hour count and they are actively responding to the May Day slogans of the CC CPSU.

According to data supplied by the USSR CSA, spring crops had been sown on 14.1 million hectares by the 13th of April. The increase for a 5-day period under review was 6.5 million hectares. A top dressing had been applied to 27.1 million hectares of winter crops -- 6 million more hectares than by this same time last year. The first 1.3 million hectares are occupied by peas. The tempo is increasing. However, there is still a tremendous volume of work remaining to be carried out on the spring fields.

The sowing campaign, which began in the southern regions, is advancing towards the center of the country, to the west and into the Volga region. The machine operators in the north Caucasus are working in a harmonious manner. A fine example is being set by the farms in Ipatovskiy Rayon in Stavropol'skiy Kray -- the initiators of the all-union competition for the highly productive use of equipment. The kolkhozes imeni Lenin and imeni Budennyy and the Sovetskoye Runo State Breeding Plant literally required 30-40 hours for sowing their early crops -- barley, peas, oats and leguminous grass mixtures. The equipment in the rayon is being used on a complex basis by large detachments. Extensive maneuvering is being carried out in all areas. The units are being transferred to tracts which dry out more rapidly. At the Yanushevskiy Sovkhoz, first place in the competition was won by the father and son in the Lesnyaki family. At night they prepare the soil and during the day -- they carry out their sowing work.

Good news has been received from the Ukraine. Here the spring crops have been sown on almost one half of the areas allocated. The Ipatovo method is being employed by 14,000 complex detachments throughout the republic. As a rule, the equipment is being used in two shifts. Two Kherson machine operators, M. Parfenenko of the Rodina Kolkhoz in Tsyurupinskiy Rayon and I. Godynyuk of the Zavety Lenina Kolkhoz in Chaplinskiy Rayon, are sowing 60 hectares daily, thus exceeding the norm by twofold. Many farms in Krymskaya, Odesskaya, Dnepropetrovskaya, Zaporozhskaya and Zakarpatskaya Oblasts mastered their sowing of early crops. Every 24 hours, 600,000 more hectares are being sown throughout the republic. First class seed is being placed in the soil simultaneously with an application of mineral fertilizer to the rows.

Under the conditions imposed by this present spring period, the greatest successes will be achieved in those areas where extensive use is made of progressive labor methods and the best agrotechnical measures. Thousands of sowing complexes are prepared to join in the mass sowing operations to be carried out on the fields in Saratovskaya Oblast. Based upon the example set by the workers in Ipatovskiy Rayon, the decision was made to completely equip the wide-swath units and to use the equipment around-the-clock and in a highly productive manner. The oblast's machine operators plan to sow their grain crops, which occupy an area of more than 4 million hectares during the best periods and in a high quality manner. It is in a similar atmosphere that sowing operations are presently commencing in Belorussia and in Volgogradskaya, Kaliningradskaya and Chimkentskaya Oblasts. Importance is attached to ensuring that the schedules for preparing the soil and for carrying out the sowing work are observed in a strict manner in all areas and that maximum labor productivity is achieved by the collectives operating the units. Towards this end, it will be necessary first of all to achieve a high level of equipment readiness. It bears mentioning however, that in a number of areas the machines are being held up in the workshops. Ten percent of the tractors in oblasts in Kazakhstan and Kirghizia are still inoperable. Nor have the fuel and lubricating materials been delivered on schedule or in the full amounts in all areas.

The primary obligation of the agronomic service is that of ensuring high quality sowing work, the development of healthy seedlings and active development of the plants during the growing season. And here the seed is of primary importance. The supply of seed is for the most part adequate, but the quality is not always satisfactory in all areas. One half of the grain and pulse crop seed in Kirovskaya and Permskaya Oblasts is still not quality-standardized and in Lipetskaya and Irkutskaya Oblast -- one third. Whereas 66 percent of the seed on farms in Voronezhskaya Oblast is of 1st class quality, in Kurskaya Oblast -- only 14 percent. The germinative capacity and germinative energy of this seed can still be improved through additional processing.

Many farms in the nonchernozem zone are experiencing a critical requirement for good quality seed. Southern workers are coming to their assistance and supplying seed for barley, oats, peas and other spring crops. However, the transporting of the seed is being delayed. At the Sheptukhovskiy sector of the Chertkovo Elevator in Rostovskaya Oblast, 2,000 tons of quality-standardized high quality barley seed for the Mordovian ASSR and Orlovskaya Oblast have been allowed to accumulate.

"We are unable to ship it. We do not have freight cars available" stated the chief of the Likhovskiy Branch of the Southeastern Railroad, V. Irzhak, while making a helpless gesture.

Thousands of tons of seed are not being shipped from elevators in the Don River region by the Privolzhskaya and North Caucasus Railroads. The USSR Ministry of Railways and the RSFSR Ministry of Procurement are familiar with the obstacles lying in the path of the seed. But they are in no hurry to eliminate them. The chemists reproach the railroad workers for the status of affairs. The collective of the Beloruskaliy Production Association over-fulfilled its quarterly obligation for the production of mineral fertilizers. But 175,000 tons of fertilizers are awaiting shipment here. The requests for freight cars are being satisfied by only 50 percent and the enterprise has an excess of goods. The large potassium plants are on the verge of ceasing operations. Yet the fertilizers are badly needed for the sowing work.

They are needed, for example, by the beet growers who are just now engaging in mass sowing operations. Just as in the past, the tone in the competition is being set by the farmers in Yampol'skiy Rayon, Vinnitskaya Oblast -- the initiators of a competition for the highest yield of sugar per hectare. They sowed the entire area of 8,200 hectares during the optimum period. Fertilizer and plant protective agents were applied together with the seed. The workers in Yampol'skiy Rayon intend to obtain no less than 430 quintals of root crops per hectare. Sugar beets are being sown in the Kuban' region, in Kirghizia and in southern Kazakhstan. In all, this crop will be grown on more than 1.1 million hectares.

This present spring period has produced many surprises for the grain growers. In countering their difficulties, the machine operators are striving to sow their cotton in a high quality manner. It has already been planted on 1.8 million hectares. The farms in Andizhanskaya, Surkhandar'inskaya, Namanganskaya and Tashkentskaya Oblasts were the first in Uzbekistan to cope with their sowing work. The sowing machines have departed the fields in Bardinskiy Rayon of Azerbaijan. Successful work was ensured by efficient operations on the part of the mechanized teams, which were competing for high cotton yields.

More and more fields are being sown in corn. There are almost 200,000 hectares alone of so-called "industrial" tracts. The planting of potatoes continues. Such work has commenced in Belorussia and the Ukraine and seedlings have made their appearance in the southern regions of the country. Sowing and planting operations are in progress on the vegetable plantations. Thousands of tons of early cabbage have been shipped to consumers by the farms in Azerbaijan.

The agricultural workers are employing each hour of springtime in behalf of the future harvest.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

POTATO PRODUCTION PLANS, GOALS FOR BRYANSKAYA OBLAST

Moscow SEL'SKAYA ZHIZN' in Russian 17 Apr 81 p 1

[Article by V. Tomin, Bryanskaya Oblast: "Owing To the Strength of Teams"]

[Text] The potato growers in Bryanskaya Oblast, where the largest areas in the Russian Federation devoted to the "secondary grain" are found, are completing their preparations for the sowing campaign. The last adjustments are being carried out on the planting machines, the seed tubers are being sorted out and fertilizer application and soil cultivation operations have commenced. A competition is unfolding among the rayons, farms, brigades and teams for obtaining a maximum yield of potatoes, carrying out all field work in a high quality manner and ensuring productive use of the equipment.

The obligations of the oblast's potato growers are as follows: to obtain 155 quintals of tubers from each of 117,000 hectares and to raise the gross production of potatoes, compared to the average annual level for the 10th Five-Year Plan, by 35 percent. There is a good foundation for accomplishing this. Experience has been accumulated in the complex mechanization of all of the technological operations. It is precisely because of this that more than 180 kolkhozes and sovkhozes throughout the oblast are obtaining stable yields of 150-200 quintals of the tubers per hectare. Moreover, the Krasnyy Oktyabr', Baklan' and Pervomayskiy Sovkhozes are obtaining 280 quintals of potatoes from each hectare. Many experienced experts are working out on the plantations. This year, 100 brigades and teams are competing to obtain 250 quintals of tubers from each hectare.

Specific agrotechnical and organizational measures aimed at raising the cropping power have been developed in all areas. And many of them are already being carried out. Up to 60 tons of organic fertilizer and 14 tons of mineral fertilizer, all of which is balanced in terms of nutrients, have been laid away for each hectare. Typically, the mineral fertilizers are being applied to the soil on a large portion of the future plantations using the progressive conveyer line method and on 20,000 hectares -- to ridges prepared in advance.

The main concern at the present time is that of pre-sowing preparation of the seed. They must necessarily be subjected to hot air warming and 14,000 tons of seed are undergoing vernalization under plastic covers and in polyethylene bags. For the purpose of prophylactic sanitation of the crops against fungus diseases, the tubers are being chemically disinfected, with microelements being added to such promising varieties as: Detskosel'skiy, Ramenskiy, Temp, Ogonek, Gatchinskiy, Domodedovskiy, Prigozhiy-2 and Nevskiy. They are being grown on 70,000 hectares.

Approximately 900 mechanized teams, assigned to complexes and detachments, have been created for ensuring the continuous carrying out of all operations. The plans call for the planting work to be completed in just 20 days. All of the required agrotechnical operations will be carried out on the plantations -- pre-seedling and post-seedling inter-row tillings, maintenance of the crops in a loose and weed-free state and measures undertaken to combat pests and diseases. For the very first time, 27 farms will cultivate potatoes using the industrial technology. The machine operators received special training through courses and seminars.

The oblast's potato growers are fully resolved to carry out the order of the 26th party congress: to improve the supply of food goods for the population. Recalling this fact, they have undertaken high obligations and at the present time they are doing everything possible to hold to their promise in an honorable manner.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

STATUS OF SPRING FIELD WORK IN VORONEZHSKAYA OBLAST REVIEWED

Moscow IZVESTIYA in Russian 14 Apr 81 p 1

[Article by V. Komov, Voronezhskaya Oblast: "The Fields Undergo an Examination"]

[Text] As is well known, each spring period has its own particular character. Nor is the present spring an exception. Initially, it threatened to arrive late in Voronezhskaya Oblast, subsequently it appeared to change its mind and at the present time it is once again acting in a capricious manner.

Last year the summer and autumn periods were rainy and cold, an additional workload fell upon the equipment and the autumn plowing work was not carried out on a timely basis. There is much work to be carried out -- spring plowing alone must be completed on more than 300,000 hectares. In addition, the plans call for the pea plantings to be increased by almost 60,000 hectares and for the beet plantations to be expanded to one quarter of a million hectares.

The Voronezh workers are prepared for such a volume of work. All of the equipment is in operating condition. Almost 90 percent of the grain and pulse crop seed that has been laid away is of high quality. The personnel have undergone serious training and retraining. Six hundred and sixty five sowing complexes have been staffed.

Each rayon has developed its own sowing strategy. For example, at the Rossiya Kolkhoz in Bobrovskiy Rayon, moisture retention work must be carried out on 3,500 hectares and early grain crops, sugar beets, sunflowers, corn and grasses must be sown on more than 3,000 hectares. Here, all of the preparatory work was completed in advance, the forces were arranged properly and accurate determinations were made with regard to the period in which each operation was to be carried out. The plans called for the early grain crops to be sown in just 80 working hours. All measures were undertaken in the interest of ensuring that no less than 30 quintals of grain and 250 quintals of sugar beets would be obtained per hectare.

In Gribanovskiy Rayon it is still winter and thus, in order to prepare better for the spring, approximately 100 party and party-komsomol groups, 130 deputy posts and people's control posts were created. This made it possible to carry out the work more efficiently and to place many reserves in operation. Approximately 94 percent of the grain and pulse crop seed was raised to 1st class condition. More than 60 stationary and mobile technical servicing points and workshops were equipped in a reliable manner.

At the present time, a top dressing of nitrogen fertilizer is being applied to the winter crops throughout the oblast. This agricultural method has already been carried out on more than 400,000 hectares. In addition to ground equipment, the work will also be carried out using more than 60 aircraft. The plans call for phosphorus fertilizers to be applied on a more extensive scale, in drill rows and during sowing and this will undoubtedly be effective.

The job contract plus bonus wage plan will be employed on a more extensive scale than last year for machine operators engaged in the cultivation of technical crops. A fine example is being set by the farmers in Talovskiy, Kashirskiy and Novo-Usmanskiy Rayons.

"We are aware of the important tasks to be carried out this year by the Voronezh farmers" stated the chairman of the oblast executive committee A. Voropayev, "It is not easy to achieve the planned goal: 24-25 quintals of grain per hectare and 200 quintals of beets. The decree on the launching of an all-union socialist competition for achieving high results during this initial year of the five-year plan obligates us to create in each labor collective an atmosphere of genuine creative research, mutual assistance in the carrying out of work, a high level of responsibility for assigned tasks and intolerance of shortcomings. Guided by the decisions handed down during the 26th party congress, we are applying a maximum amount of effort towards ensuring that the competition for agricultural workers produces the highest results.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

SPRING SOWING PROBLEMS IN KRASNODARSKIY KRAY DISCUSSED

Moscow PRAVDA 17 Apr 81 p 1

[Article by V. Logvinov, Krasnodarskiy Kray: "Spring Does Not Allow For Any Postponement"]

> [Excerpts] The sowing of early spring crops and row and technical crops is unfolding on an extensive scale in the Kuban'. They occupy approximately 2 million hectares. For the first time, corn, sunflowers and soybeans will be grown on large areas -- 380,000 hectares -- using the industrial technology.

The party, soviet and economic organs view this present spring period as a new stage for improving the culture of farming, the quality of work and the expertise of the grain growers. A great amount of work has been carried out in connection with organizing the preparations for the spring campaign and its successful completion. On all of the farms, working plans for the sowing operations have been developed and approved for the bureaus of the rayon and municipal committees.

The Dinskiy Rayon Party Committee developed and is implementing measures aimed at successfully carrying out the spring sowing work.

On a majority of the kolkhozes and sovkhozes in Leningrad, Timashevskiy, Koshekhabl'skiy and Ust'-Labinskiy Rayons, the sowing work is being carried out in a rapid and fine manner. The party, professional trade union and komsomol organizations on the farms, in light of the recent decree of the CC CPSU, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee, have launched a socialist competition for successful fulfillment of the plans for the five-year plan.

However, the preparations for and the carrying out of the sowing operations are not being conducted with the proper degree of responsibility in all areas. On some farms in Novopokrovskiy, Kushchevskiy rayons, not all of the seed is of first class quality. Only slowly is the seed being chemically disinfected or raised to a high sowing condition. In Otradnenskiy Rayon, there have been incidents of the sowing schedules being violated and of the untimely exchange of seed.

Such miscalculations definitely have an effect on both the fields and the yields. During the last five-year plan the farms in Shcherbinovskiy Rayon sustained a shortfall of almost 115,000 tons of grain. The principal reason -- delayed and low quality preparation of the soil, violations of the sowing schedules and an insufficiently high level of seed production. Nor have all of the farms as yet corrected these shortcomings. At the Kolkhoz imeni Shevchenko in Primorsko-Akhtarskiy Rayon, one of the most severe bottlenecks is that of an acute shortage of machine operators. No thought is given here to double-shift operations. It is for this same reason that a number of farms in Vyselkovskiy Rayon are suffering; practically all of the equipment is operated in one shift.

The warm winter and abundance of moisture stimulated early weed growth on the winter fields. In particular, the crops in Abinskiy, Severskiy and Pavlovskiy Rayons are strongly contaminated by weeds. Nor is active work aimed at destroying them being carried out in all areas. Such work has slackened noticeably, for example, on farms in Korenovskiy Rayon. Not all of the kray's machine operators possess the skills required for growing row crops using the new technology.

The complicated spring period has delayed work out on the fields and introduced corrections in the work plans of the grain growers. The party and economic organs must eliminate these problems as rapidly as possible and they must achieve maximum utilization of the equipment and efficient work by all teams in the sowing complex.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

CORN SOWING PREPARATIONS IN PROGRESS IN BRYANSKAYA OBLAST

Moscow SEL'SKAYA ZHIZN' in Russian 3 Apr 81 p 1

[Article by G. Krasnoperov, agronomist and A. Glazkov, Bryanskaya Oblast]

[Excerpts] During the past few years, considerable changes have taken place in the structure of the feed fields in Bryanskaya Oblast. The specialists of leading kolkhozes and sovkhozes are displaying a preference for those crops which, for equal or less expenditures of labor and resuurces, produce high nutrient yields per hectare. Increases are taking place in the areas assigned for clover and alfalfa and a preference is being shown for corn. In 1973, corn was planted on 24,000 hectares and in 1980 -- on 65,000 hectares. This year the plans call for these areas to be expanded by still another 25 percent.

Other farms could be cited where corn is being grown using the progressive method and fine results are being obtained. Their practice is borne out once again -- the method of waterproofing of seed is very promising. At the same time, a question arises: where can this waterproofing treatment work be carried out? In some rayons, it is accomplished at the grain receiving enterprises, with workers attached to the sanitary service objecting quite properly. In other rayons the treatment work is organized on the farms, but not always in a high quality manner. The waterproofing of corn seed must be placed on a modern basis and the work is best carried out in the areas where the seed is produced. Thus, once the work is completed, the finished seed can be delivered to farms in the nonchernozem zone. Such is the opinion expressed by many of the oblast's specialists and the USSR Ministry of Agriculture should heed this opinion.

The oblast's corn growers possess valuable operational experience. Unfortunately, the corn yields continue to remain low in a number of rayons -- Brasovskiy, Vygonichskiy, Kletnyanskiy, Mglinskiy and Karachevskiy. Yes and how could the yields be high if almost no fertilizer was applied to the plantations last year, in behalf of the harvest, at the Pravda and Zavety Il'icha kolkhozes in Kletnyanskiy Rayon or at the Zaiput'skiy and Boryatinskiy sovkhozes. The fertilizers for this year's harvest are being supplied at very slow rates.

The oblast's corn growers are presently preparing for their sowing work. Time still remains for studying thoroughly the experience of experts in obtaining high yields, for supplying fertilizer for the corn, for determining its place in the crop rotation plan and for eliminating existing shortcomings.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

AIRBORNE TOP DRESSING--Bryansk--The oblast's pilots of agricultural aviation have commenced applying a top dressing to the winter crops and perennial grasses from the air. The plans call for this work to be carried out on more than 200,000 hectares. The aviators are working in collaboration with enterprises of Sel'khozkhimiya. All of the loading work has been mechanized and bases have been built for storing the mineral fertilizers. [Text] [Moscow TRUD in Russian 31 Mar 81 p 1] 7026

SPRING SOWING PLANS--Bryansk--The farms in the southwestern rayons of the oblast have commenced their pre-sowing tilling of the fields. They are devoting special attention to the quality of the field work and to raising the fertility of the soil. Spring sowing plans and schedules have been developed in all areas. The fulfillment of these plans and schedules and also the quality of the field work are being monitored by operational staffs and posts of people's controllers. [Text] [Moscow TRUD in Russian 7 Apr 81 p 1] 7026

SOWING OPERATIONS COMMENCE--Volgograd--The farms in the oblast's southern rayons have commenced sowing their early spring crops. More than 25,000 units, joined together in sowing complexes, are in operation. The farmers are pleased by the abundance of moisture available this spring, but this raises the requirements with regard to the quality of soil preparation. Specialized teams have already carried out moisture retention work on an area of more than 1 million hectares. [Text] [Moscow GUDOK in Russian 17 Apr 81 p 1] 7026

CONCERNS OF GRAIN GROWERS--Volgograd, 18 Apr--This year's spring conditions in Volgogradskaya Oblast have been complicated. Rain and cold weather are still restraining the work tempo and confronting the grain growers with new tasks. Under such conditions, the farmers must display not only expertise but also fortitude out on the fields. A competition to obtain high yields, launched on the basis of an appeal by Hero of Socialist Labor and head of a family of machine operators N.M. Yevdokimov, has become a fine tradition. At the present time, it is proving to be of great assistance in overcoming the difficulties of the spring sowing campaign. The majority of the oblast's farms have resolved to complete their sowing work in just 90 working hours. The Ipatovo work method is helping to solve this task in a successful manner. It has become the basic technology for the field conveyer line, with all 1,200 of the sowing complexes operating according to the principle involved. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 19 Apr 81 p 2] 7026

INCREASE IN IRRIGATED ACREAGE--Astrakhan'--The oblast's land reclamation detachments have completed their work of preparing the irrigated lands for watering. This year the area of such land will be increased considerably and amount to 200,000 hectares. From this land the agricultural workers have vowed to obtain 150,000 tons of rice, 480,000 tons of vegetables and a like amount of melons. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 10 Apr 81 p 1] 7026

VEGETABLE AND MELON CROP--Astrakhan'--In the southern rayons of the Volga Delta, immediately following the sowing of the forage and early grain crops, the preparation of the fields for the planting of watermelons is nearing completion. This year the Astrakhan farmers plan on selling 845,000 tons of vegetables and watermelons. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 14 Apr 81 p 1] 7026

WATER SUPPLY IRRIGATION--Nal'chik--The sowing of early grain crops in the Kabardino-Balkarskaya ASSR is coming to a close. The farmers on many farms have already commenced still another spring operation -- water supply irrigation. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 14 Apr 81 p 1] 7026

GRAIN CORN PRODUCTION--Stavropol'--All of the Stavropol' machine operators have made preparations for growing grain corn using the industrial technology. The equipment has been prepared and adequate quantities of seed and herbicides have been laid away. This year the farmers must obtain a harvest of ears from more than 57,000 hectares. [Text] [Moscow TRUD in Russian 1 Apr 81 p 1] 7026

SUGAR BEET STATUS--Krasnodar--This year the Kuban' farmers must plant early grain crops on almost 2,000 hectares. A large portion of this area has been sown. There is a great amount of activity today out on the beet plantations. Of 212,000 hectares set aside for sugar beets, a large portion has already been sown. The beet growers in Novokubanskiy and Uspenskiy Rayons were the first to complete their sowing work. All of the work out on the plantations is being carried out in two shifts. More than 1,000 sowing complexes are in operation here. For the first year of the five-year plan, the Krasnodar farmers have resolved to sell more than 6 million tons of the sweet roots to the state. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 17 Apr 81 p 1] 7026

NORTH CAUCASUS FIELD WORK--Severo-Osetinskaya ASSR--Notwithstanding the caprices of spring, the north Caucasus farmers are carrying out their field work in an active manner. Mechanized teams are turning over the moisture, sowing grain crops and feed mixtures and tending the winter crops. They are making preparations for their corn sowing work. In the Kabardino-Balkarskaya ASSR, where this year the farmers vowed to obtain 310,000 to 320,000 tons of grain corn, a great amount of work was carried out this past winter in connection with making extensive use of the experience accumulated in using the industrial technology for corn production. All of the team leaders and chiefs of mechanized detachments have undertaken courses of instruction and schools for leading experience are in operation at the kolkhozes and sovkhozes. The equipment was repaired in a timely manner, mutual inspections were conducted and working plans composed. Thus the initial forays onto the fields became a type of general rehearsal for the mass sowing of the principal crops -- corn and sunflowers. A similar situation prevails in the neighboring Severo-Osetinskaya ASSR, where the decision was made to raise the gross production of the amber grain to 175,000 to 180,000 tons. The equipment is being employed in a highly productive manner in almost all areas. All of the machines and mechanisms have been concentrated in large mechanized detachments and this is helping to result in successful operations. Many machine operators, after examining their obligations, have vowed to remain out on their fields until such time as they have surpassed their norm by one and a half times and carried out all operations in a high quality manner. Their principal goal -- not to waste any of the valuable spring period time and to create a strong foundation for the new crops. [by S. Timofeyev] [Excerpts] [Moscow SEL'SKAYA ZHIZN' in Russian 7 Apr 81 p 1] 7026

NEW TECHNOLOGY EMPLOYED--Ordzhonikidze, 4 Apr--All of the farms in the Severo-Osetinskaya ASSR are prepared to grow corn using the industrial technology. Such is the data obtained from mutual inspections carried out at kolkhozes and sovkhozes. The data was summarized in the republic headquarters for the sowing of this crop, created at the Ministry of Agriculture level of the autonomous republic. The equipment has been repaired in all areas, first class seed and herbicides have been prepared, the fields have been thoroughly levelled off, work plans have been composed and the field camps equipped. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 5 Apr 81 p 1] 7026

EARLY GRAIN SOWINGS--Kaliningrad--The first 65,000 hectares -- one half of the grain fields -- have been sown in early grain crops in the most western oblast of the Russian Federation -- Kaliningradskaya Oblast. Plowing work is being carried out at the same time. The group utilization of equipment and the flow-line Ipatovo technology are being employed in all areas and more than 200 mechanized all-round detachments have been created. In addition to mechanized teams, these detachments include teams for providing technical and cultural-domestic services. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 14 Apr 81 p 1] 7026

WINTER CROP TOP DRESSING--Kirov--The work of applying top dressings to winter crops has commenced in 10 rayons in Kirovskaya Oblast. Taking advantage of the morning frosts, the machine operators are going out onto the fields and spreading fertilizers and applying one and a half quintals of ammonium nitrate per hectare to the soil. In all, the plans call for a top dressing to be applied to 428,000 hectares of winter rye throughout the oblast. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 14 Apr 81 p 1] 7026

SOWING OPERATIONS COMPLETED--Kursk--Today grain crops were sown here on 60,000 hectares. Leading farms throughout the oblast are already reporting completion of their sowing work. Among them -- the Kolkhoz imeni Frunze in Belovskiy Rayon. The grain crops were sown here in record time -- in just 58 hours. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 14 Apr 81 p 1] [7026]

SOIL PREPARATION WORK--Kursk--The farms in the southern rayons of the oblast have commenced their pre-sowing tilling of the soil. Rapid moisture retention work out on the fields, under chernozem conditions, serves to guarantee that a good harvest will be obtained. Thus the farmers are striving to take advantage of the best periods for preparing the soil. Based upon the example set by the machine operators in Korenevskiy Rayon, extensive use is being made in all areas of wide-swath cultivator units and rail-land levellers with harrows, connected together in staggered rows. The sowing of grain crops, which is expected to last for 3 working days, will commence immediately following the harrowing and cultivation of the autumn plowed land. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 10 Apr 81 p 1] 7026

CIVIL AVIATION TOP DRESSINGS--Novgorod--The aircraft of civil aviation take to the skies at sunrise; these are the "airborne grain growers" of the Novgorod Combined Detachment of the Leningrad Administration of Civil Aviation. Working on farms in Starorusskiy Rayon, the pilots carry out up to 50 flights daily, exceeding their task by a factor of 1.5. The application of top dressings to the crops from the air is also being carried out at kolkhozes and sovkhozes in Demyanskiy, Shimskiy, Volotovskiy and Soletskiy Rayons. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 17 Apr 81 p 1] 7026

SOWING PLANS REVEALED--Kemerovo--This year, spring arrived in Siberia somewhat earlier than usual. All of the kolkhozes and sovkhozes in the Kuznetsk Basin are engaged in preparing their fields for the sowing work. Mineral fertilizers are being applied and moisture retention work is being carried out in Novokuznetskiy, Promyshlennovskiy, Leninsk-Kuznetskiy, Belovskiy and other rayons. This is particularly important when one considers that there was very little snow during the winter. All of the farms have been supplied with good quality seed. This year, in Kemerovskaya Oblast, 350,000 hectares will be sown in grain crops and approximately 300,000 hectares in forage crops. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 17 Apr 81 p 1] 7026

KUBAN' FIELD PREPARATIONS--Krasnodar--Almost one fourth of the spring crop fields in the Kuban' region have been set aside for the cultivation of row crops using the industrial technology. Mechanized teams have commenced the sowing of sunflowers. The fields have been levelled off, fertilized well and treated with herbicides. Public posts for the maintenance of quality have been created on the farms. [Text] [Moscow GUDOK in Russian 21 Apr 81 p 1] 7026

COMPETITION FOR HIGH YIELDS--Voronezh, 17 Apr--The Voronezh grain growers have launched a great spring offensive. A competition has unfoled in all areas for obtaining 24-25 quintals of grain crops and 200 quintals of sugar beets per hectare and high yields for the grain forage and forage crops during the first year of the five-year plan. Their main concern at the present time is that of retaining the moisture. They value very highly each hour of working time and they are harrowing the autumn plowed land, the winter crops and the perennial grasses. The farms in Pavlovskiy Rayon completed this work in a matter of hours. [by A. Katykalov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 18 Apr 81 p 1] 7026

FIELD WORK TEMPO INCREASING--Bryansk, 20 Apr--The kolkhozes and sovkhozes in the oblast's southern rayons are sowing their early grain crops. Using broad-swath units, the crews of A. Yanchenko and I. Serdyukov of the Volna Revolyutsii Experimental Farm in Novozybkovskiy Rayon overfulfilled their output norms to a considerable degree commencing with the very first days of work. Hundreds of hectares have been sown in barley and oats in Klimovskiy, Sevskiy and Krasnogorskiy Rayons. The tempo of the field work is increasing. [by A. Glazkov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 21 Apr 81 p 1] 7026

MASS SOWING OPERATIONS--Yoshkar-Ola, 20 Apr--The Kolkhozes and sovkhozes in the autonomous republic are completing their last preparations for the mass sowing operations. In all, 220 complexes have been created and they include 2,365 teams for carrying out various types of work. Teams for applying a top dressing to the winter crops have already joined in the operations. The machine operators at the

Smena Kolkhoz are now in their second week of applying a top dressing to the crops. Fine concern for the future harvest is being displayed also at the Kolkhoz imeni Lenin, the Volga Sovkhoz and at other farms in Gornomariyskiy Rayon. A top dressing is being applied to the crops in all of the rayons. [by P. Toyshev] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 21 Apr 81 p 1] 7026

SOIL PREPARATION WORK CONTINUES--Orel, 20 Apr--The oblast's machine operators have commenced harrowing and applying a top dressing to their perennial grass plantings. Mineral fertilizers applied in the spring with the aid of units serve as a guarantee that high fodder yields will be obtained. Each year the farmers treat approximately 50,000 hectares of land. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 21 Apr 81 p 1] [7026]

TOP DRESSING APPLICATIONS--Penza, 16 Apr--The last snow is disappearing from the fields and the grain growers are hastening to apply a top dressing to the winter crop plantings and perennial grasses. Each morning they move their RUM's [mineral fertilizer spreaders] out onto the frost covered fields. The aircraft of agricultural aviation take to the air. The farms in Penzenskiy Rayon are already completing their work of applying a top dressing to the winter crops, while those in Bashmakovskiy, Lopatinskiy, Nizhnelomovskiy and other rayons are more than half finished with carrying out this work. [by A. Andreyev] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 17 Apr 81 p 1] 7026

CSO: 1824/220

LIVESTOCK FEED PROCUREMENT

CULTIVATION OF BARLEY AS FEED GRAIN PROMOTED

Moscow SEL'SKAYA ZHIZN' in Russian 12 Apr 81 p 2

[Article by P. Garkavyy, Hero of Socialist Labor, VASKhNIL academician, Lenin and USSR State Prize winner; A. Minchevskiy, USSR State Prize winner, candidate of agricultural sciences; and V. Navolotskiy, candidate of agricultural sciences: "The Country's Barley Fields"]

[Text] The Basic Directions for the Economic and Social Development of the USSR During 1981-1985 and the Period up to 1990 earmark the acceleration of the development of feed production. This was discussed in a report at the 26th Party Congress by General Secretary of the CPSU Central Committee, L. I. Brezhnev. Taking into account that the demand for food grain is fully satisfied, he emphasized, emphasis should be placed on raising forage grain crops.

The expenditure of concentrated feeds in animal husbandry has increased a great deal in recent years. But the production of forage grain does not satisfy the demand. Thus in 1978 the country used almost 146 million tons of concentrated feeds and the year before last, more than 146 million tons, and the production of forage grain amounted to 89.6 and 71.5 million, respectively. It turns out that in certain years the shortage of it exceeds the production. Therefore the mixed feed industry must annually use tens of millions of tons of wheat for preparing mixed feeds, and millions of tons of it are used for feed on the farms themselves. This is not economically expedient. For in terms of feed qualities barley is incomparably better than wheat. Wheat is not a full-value feed for all kinds of livestock and poultry. And while about 4 kilograms of barley are required for a kilogram of weight gain in hog raising and not much more corn is required, about 6-7.9 kilograms of wheat are needed.

This is logical: in terms of the amino acid composition of the protein, including lysine, is better balanced in barley than it is in other grain crops. While the protein of barley lacks 20 percent of the lysine necessary for normal feeding of animals, wheat lacks 43 percent of the necessary lysine in its protein. This is why the production of pork, especially bacon, is unthinkable without barley grain. This is a good concentrated feed for dairy cattle as well.

Moreover, barley is more productive than wheat in large zones of the country. And in the country as a whole it exceeds wheat in terms of grain threshings. For example, during 19 years (1961-1969) the annual barley yield throughout the country amounted to 14.4 quintals while the wheat yield was 13.4.

Three main forage crops are cultivated in our country--barley, oats and corn--and, in the interests of the development of animal husbandry, the areas planted in them should be expanded. As with food grain, they should be provided with the appropriate predecessor and good doses of mineral and organic fertilizers and not residuals from other crops. Strange as it is, fertilizers are practically not applied to barley on many farms, with the exception of those in Belorussia, the Baltic area and certain areas of the nonchernozem zone.

Obviously in order to increase the production of forage grain, the area planted in barley should be increased and, the main thing, stable yields of about 23-25 quintals per hectare should be achieved in order to increase the gross yield to 100 million tons in the future. In the Baltic republics and Belorussia, where spring barley significantly surpasses winter and spring wheat in terms of productivity, progress has already been made in the direction of planting spring barley. Winter wheat is less productive than spring barley in a number of oblasts of the Ukraine as well. For example, in Ivano-Frankovskaya, L'vovskaya and Rovenskaya oblasts it surpasses wheat by 2.3-2.8 quintals per hectare. Here and in other regions of the Ukraine as well it is necessary to make the corresponding adjustments in the structure of the planted areas. This is especially true since the areas planted in barley in the republic vary a great deal. Thus in 1976 it occupied more than 5.8 million hectares here and the year before last, about 4.4 million hectares, and this year it is intended to reduce the areas planted in it to almost 1.8 million hectares.

It is possible to significantly increase the production of forage grain in the southern regions of the country by expanding the areas planted in winter barley which, in the zone where it is cultivated, appreciably surpasses spring barley in productivity. Thus in Odesskaya Oblast during the past 15 years the threshings of grain from winter barley were larger than those of spring barley by 1.5-12.8 quintals per hectare. And in Krymskaya Oblast in Krasnodarskiy Kray winter barley is not only more productive than spring barley, but also more productive than winter wheat. In Krymskaya Oblast, for example, during 1976-1978 the productivity of winter barley was 1.2-2.3 quintals greater than that of winter wheat and in Krasnodarskiy Kray--1-4 quintals higher.

In view of the biological capabilities of winter barley and the availability of highly productive strains of it with increased winter hardiness, it would be expedient to expand the areas planted in this crop at the expense of spring barley and winter wheat in the south of the European part of the country from 700,000 to 1.5 million hectares. These are mainly regions of the Ukraine, the Northern Caucasus and Moldavia.

It is also necessary to expand further the areas planted in spring barley at the expense of spring wheat since the barley yields are higher almost everywhere, especially when planted after non-fallow predecessors. In the country as whole the average additional yield of spring barley as compared to spring wheat during 9 years (1971-1979) amounted to 4.4 quintals per hectare. Only in the extremely unfavorable year of 1979, because of the very late planting of spring barley, did it fall behind wheat by 0.6 quintals. And this is the only time during all of the post-war years.

It is also possible to expand the areas planted in spring barley in regions where virgin land has been assimilated in the nonchernozem zone and Siberia, especially in places where wheat with poor bread baking qualities is raised, and also in the Volga area. In the northern regions of Siberia where wheat frequently does not ripen it should have been completely replaced with barley long ago.

Such a change in the structure of the planted areas will make it possible to increase the gross grain yields in the country as a whole and, with the application of mineral fertilizers to barley, corn and oats, to considerably increase the gross yield of forage grain. Moreover there should be significant improvement in the quality of concentrated feeds. Barley grown in the south of the Ukraine, the Northern Caucasus, the Volga area and especially Kazakhstan and the south of Siberia, contains 14-15 percent more protein in the grain and is as good as mixed feeds in terms of its nutritional value. Protein supplements are not needed for it.

Selection research for improving the nutritional qualities of barley is especially interesting in this respect. The All-Union Selection-Genetics Institute has obtained the first strain of spring barley for feed, Odesskiy-84, with an increased content of protein and lysine. In experiments with fattening hogs conducted under the leadership of academician G. A. Bogdanov, the feeding of this strain of barley to hogs provided for an average daily weight gain of 621 grams while when they were fed with ordinary barley it was 549 grams. And when they were fed a fully balanced mixed feed the average daily weight gain of the animals in these experiments amounted to 632 grams. It turns out that the grain from Odesskiy-84 barley is almost as good in nutritional qualities as a good mixed feed. The introduction of strains of this type into production will provide for high weight gains of animals and will increase the production of meat with a reduction of the expenditures of concentrated feeds.

But it should be noted that we are still far from fully realizing the potential possibilities of the new strains of barley. Thus during the past 10 years at strain testing stations of Odesskaya Oblast the average yield of regionalized strains of spring barley amounted to almost 41 quintals per hectare and on elite feed growing farms--30 quintals while under ordinary production conditions it was less than 21 quintals. And this situation can be found in many zones. The main reason for the small yields, as we have already emphasized, is that the majority of farms apply practically no fertilizers to barley. The experience of Belorussia is very instructive in this respect. Because of the application of fertilizers in combination with other agrotechnical measures they manage to increase the barley yield 3.5-fold in a relatively short period of time.

With the overall intensification of farming, the productivity of barley also increases. But, naturally, new kinds of strains are needed for the new cultivation conditions, primarily those that are more resistant to lodging and diseases. Selection work is successfully solving this problem. In recent years many good strains of spring barley have been isolated. They include, for example, a number of strains from the All-Union Selection and Genetics Institute: spring barley--Odesskiy-36, Nutans-244, Odesskiy-69 and Odesskiy-70; and winter barley--Odesskiy-46, Oksamay and Zimran. Good strains have been created at the Donetskaya experimental station and the Krasnodarskiy Scientific Research Institute of Agriculture.

Beginning in 1982 Odesskiy-82 spring barley will be regionalized in Nikolayevskaya, Khersonskaya and Zaporozhskaya oblasts. Last year on the Kolkhoz imeni Kuybyshev in Ustinovskiy Rayon in Kirovogradskaya Oblast harvested 63 quintals of grain from its planted areas. In Kirovogradskaya, Poltavskaya, Sumskaya and Belgorodskaya oblasts, the Nutans-518 strain was regionalized last year. Its productivity on the farms reaches 47 quintals. In cooperation with selection workers of the GDR, the institute has isolated the Druzhba strain which is intended for highly intensive farming. It has been highly productive on many strain testing stations of the country and it has good resistance to lodging and leaf and stock diseases. This barley has occupied first and second place at many strain testing stations of the Ukraine, and also Kurskaya and Voronezhskaya oblasts and Moldavia. Thus at the Dondyushanskaya strain testing station in Moldavia, with a yield of 69 quintals per hectare, the additional yield over the standard strains amounted to 12.5-17 quintals, and at the Bershadskaya and Kalinovskaya strain testing stations in Vinnitskaya Oblast--3.8-7.9 quintals.

Strains of 6-row spring barley--Pallidum-90, Pallidum-76 and Muromets have been created for the first time for conditions of intensive farming. The potential productivity of the new strains is 80 quintals and more. Thus at the Dondyushanskaya Pallidum-90, with a yield of 82.8 quintals, succeeded the standard 2-row strain, Chernomorets by 17.4 quintals and Donetskiy-8--by 20.8 quintals. Last year under production conditions of Vinnitskaya and Rovenskaya oblasts the additional yield of the Pallidum-90 strain reached 26-27 quintals as compared to regionalized strains. Muromets barley practically does not lodge and is not infected with powdery mildew or loose smut. It can be cultivated on irrigated fields. All this shows how promising the new area in barley selection is.

But all of these possibilities of the new types of strains will not be realized until the farms strictly fulfill all requirements of agrotechnology for barley raising.

In order to obtain average barley yields at the level of 23-25 quintals per hectare, it is necessary to provide all areas planted in spring and winter barley with mineral fertilizers in the amount of 40-50 quintals of nitrogen, phosphorus and potassium (inactive substance) for each hectare. All barley fields should be planted with treated seeds and spring barley should be planted only after fall cultivation. And a revision of the procurement prices for barley grain has long been needed. It is necessary to overcome the significant difference in our prices for barley and wheat: in many countries barley grain is valued more highly than wheat, in keeping with its good nutritional qualities.

11772
CSO: 1824/214

YEREVAN CONFERENCE ON PROPER UTILIZATION OF WATER RESOURCES

Yerevan KOMMUNIST in Russian 29 Mar 81 p 2

[Article: "On the Agenda -- Questions on the Rational Use of Water Resources"]

[Text] The decisions handed down during the 26th CPSU Congress reflected the great national economic importance being attached to scientific studies and practical measures associated with the proper utilization and protection of water resources. The problems concerned with scientific-technical progress in the field of water supply and water-protective measures were discussed, in light of the requirements handed down during the congress, during a traveling conference held in Yerevan on 25-27 March. The conference was organized by the Scientific Council for Problems of the Biosphere of the USSR Academy of Sciences, jointly with the Permanent Committee for the Development of Problems Associated With the Protection of Natural Waters and the Scientific Council for Problems of the Biosphere of the Academy of Sciences for the Armenian SSR. More than 100 scientists and specialists from Moscow, Leningrad, Novosibirsk, Kiev, Yerevan and other cities throughout the country, representing approximately 30 academic and branch institutes, participated in the work of the conference.

The Vice President of the Academy of Sciences for the Amrenian SSR, V.V. Fanardzhyan, welcomed those participating in the conference and wished them success in their work.

In connection with the problems discussed, 15 reports were delivered on such subjects as water supply and water availability throughout the country, the development of a non-wasteful technology, the modern requirements with regard to quality, the problems associated with protecting the health of the population, the development of scientific studies and so forth. A lively exchange of opinions took place.

Our correspondent requested the co-chairman of the Organizing Committee for the conference, Corresponding Member of the USSR Academy of Sciences G.V. Voropayev, to comment upon the results of the meeting.

"At the present time, the rational utilization of clean water, including fresh water, is one of the most important tasks confronting mankind" he stated, "This problem is particularly acute in those regions where the natural supplies of water are gradually dwindling. The constant growth taking place in water consumption and in the requirements for water is imposing a special task upon our Soviet scientists and specialists -- to develop and implement measures which will make it possible in the near future to satisfy completely the needs of the national economy while at the same time creating a favorable natural environment for man. It was in this regard that a serious discussion took place during the conference on studies carried out in the Ukraine, the Urals, Siberia and Armenia. A number of interesting reports were delivered and useful proposals made in connection with these studies. All those participating in the conference were unanimous in their belief that measures must be undertaken to cut off the flow of sewage water into reservoirs, to regulate the flow of rivers and to carry out their partial redistribution among the various territories."

Naturally, the Sevan problem was discussed. This came about mainly owing to the fact that our conference was held in Yerevan. The Sevan problem is presently being studied by a number of institutes in Armenia and also by a number of all-union institutes, which are addressing themselves to the protection and rational utilization of the natural resources of the lake. During the conference, emphasis was placed upon the need for studying the water balance of the Sevan in a thorough and comprehensive manner, so as to make it possible to control its regime properly.

Considerable importance was attached to strengthening collaboration between the various scientific centers and exchanging leading experience, factors which will make a worthy contribution towards solving the problems touched upon.

Appropriate recommendations were prepared for the problems discussed.

7026
CSO: 1824/223

REGIONAL DEVELOPMENT

CRITICAL WATER SUPPLY SITUATION IN YEREVAN DISCUSSED

Improving Water Supply Situation

Yerevan KOMMUNIST in Russian 10 Jul 80 p 4

[Article by R. Meliksetyan: "Once Again Concerning the Water for Yerevan"]

> [Text] It must not be forgotten that the mean statistical resident of Yerevan is a faceless individual, who developed as a result of a purely arithmetical addition and division of the number of city-dwellers inhabiting opposite poles of a favorable water balance. The tenants in some apartments have water around-the-clock, while others are forced to maintain a vigilant watch, both day and night, in front of lifeless water taps, in the hope of being present at that happy moment when life-giving moisture appears, if only briefly. Unfortunately, there are more of the latter individuals. This is borne out by the Editorial Board's mail, in which complaints concerning poor water supply occupy a leading place.
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> During the past few weeks, the Editorial Board has been asked to furnish assistance by the residents of House No. 40 on Lenin Street and houses Nos. 3-14 on Tolstoy Street, by tens of families in the settlement of Dzhrvezh and by 70-year old Ashkhen Karapetyan who lives on the 11th floor of House No. 2 on Shaumyan Street. With both indignation and bitterness, the people wrote regarding the complete absence of water or constant interruptions in its supply, the futile statements made at various levels and the difficulties they are encountering in their daily lives because of this problem.
>
> These alarming signals are forcing the Editorial Board once again into studying the drinking water problem and also those shortcomings and disruptions which are hindering the normal supply of water to the city.

Eleven hundred liters of water per second remain for the rural consumers. This is also an average figure to a certain degree. It is so because, in accordance with the approved limits, 790 liters of water per second are required to satisfy the requirements of nearby populated points and yet a check carried out in individual villages has revealed that a minimum of two times this amount is being consumed there. Moreover, it is not being consumed in the established manner. Quite often, no controls are being exercised and at times it is even being consumed on a gratuitous basis.

We were startled by some discoveries made in the village of Aramus in Abovyanskiy Rayon, through which a water line from the Katnakhpyurskiy sources passes. If the residents of Aramus had laid out their water line network through the entire village, installed pumps where necessary and connected everything up at one point to the mainline, they would have obtained the prescribed amount of water legally. But a simpler and more convenient solution was found. A portion of the families residing directly along the route preferred to hook up directly to the "holy of holies" -- the city's main water supply artery. At first, only a few individuals undertook this risk. Subsequently, their neighbors, noticing that they went unpunished, undertook to do the same thing.

"But where was the militia looking at the time?" you might ask.

The militia was, so to speak, looking at the ground. Certainly, not all of the militia, but certainly its representative in Aramus, Zh. Hagapetyan, who also was obtaining water by means of the simplified method.

"And where was the Executive Committee of the Village Soviet looking?"

The Executive Committee reviewed the situation but saw nothing, since it was assured by its own chairman, M. Khachatryan, that the illegal diversion of water was being carried out at night only. Is it possible that during the brief nighttime hours the residents managed to dig up a 3-meter hole and trench, locate the mainline, organize the welding work, cover the hole and trench and thereafter apply a coating of asphalt to the street?

"Finally, why did not the Vodokanal Production Administration of the Executive Committee of Yergorsovet intervene?"

But it did in fact attempt to intervene. A bulky file of correspondence is available in this regard. Vodokanal requested the procurator for Abovyanskiy Rayon to institute criminal proceedings against the guilty parties, as set forth on an attached list, the procurator sent the materials to the ROVD [rayon department of internal affairs] and the ROVD sent a reply to Vodokanal -- open up the route, find the points where the line was tapped and we will aid your workers, that is to say, we will guarantee the inviolability of your actions (measures which are by no means excessive if such violations are to be eliminated). Since the work of exposing the water line, which lay deep in the ground, over a distance of 1-2 kilometers was just as difficult as building a new one, the circle tightened and the work was buried in oblivion. And today more and more Aramus families are procuring water by this tested method.

In a similar manner, drinking water is being plundered by the owners of private hothouses in the villages of Gekhanist and Argavand in Masisskiy Rayon. The overall area of these plantations under glass is 50,000 square meters. True, the large-scale flower growers maintain that by no means are they using drinking water and yet the accurately welded half-inch pipe, which stretches across the yards to the hothouses tells another story. Nor does the problem stop here. In all of the homes in the village of Gekhanist which we happened to visit there were 2-3 water faucets from which water was dripping in a wasteful manner.

By means of mass inquiries and cross interrogations (the chairman of the Gekhanist Village Soviet, A. Arutyunyan, who was fired for incompetence, refused to accompany us or to furnish the required information), we learned that the villagers, after uniting into groups of 40-80 families used various means for obtaining their water. Some lines were laid out according to plans and others -- by eye. Some families pay for their water, while others do not. One particular question brought forth a simple reply -- the residents of Gekhanist are dissatisfied with the pressure; it should be increased.

On the other hand, excellent pressure is available for the drinking water in the village of Nor-Gekhi in Nairiyskiy Rayon. People on the fourth floor of a building drop hoses into their yards and water their trees, bushes and flowers. Nearby -- in an area of private homes -- the gardens are watered using drinking water and at times it simply flows from hoses -- as one housewife explained -- so that the children will be able to drink cold water.

The finale for this "idyll" was heard on the farmstead of Vostanik Babakhanyan -- the controller for the Vodokanal Production Administration, responsible for monitoring the order and reliability of the water line in his sector. From a thick pipe installed in the yard of the controller, water irrepressibly gushed forth and spread out over a large orchard. There was a valve on the pipe, but for some reason it was never closed and merely served as a decoration. A generous jet of water pours out here daily, from month to month and from year to year. Following this, it must be confessed, there was not even any desire to question the controller as to how he protects the water entrusted to his care against leakage.

We visited only four of the somewhat more than 30 villages through which the water lines which feed Yerevan pass. And there is no basis for believing that the situation is better in other populated points.

The conclusion to be drawn is quite obvious: hundreds of suburban consumers of water, by truths and falsehoods, have brought the water line onto their own properties and are utilizing it in the absence of any schedule or limitations. They are squandering it and they are not paying any fine or even the generally accepted payment for water.

It is obvious that the forces of the Vodokanal Administration are not capable of eliminating this confusion. The illegal hook-ups must be stopped, water supply plans and systems must be developed for the populated points, a single system must be established for collecting water payments and, finally, control must be exercised over the appropriate organs and society for water usage in the rural areas.

In the decree adopted late last year by the government of the republic, a number of measures are pointed out for improving the water supply system for the city of Yerevan. The Executive Committee of the Yergorsovet [Yerevan Municipal Soviet], the Ministry of Housing and Municipal Economy of the Armenian SSR and the executive committees of local soviets of people's deputies were all given a period of 3 months in which to develop proposals for systematizing the water supply for populated points which receive water via the capital's water lines. However, as yet no action has been taken in this direction and two letters sent to appropriate organizations by Vodokanal remain unanswered. When will we learn just how much water is being lost?

The time is certainly at hand for giving thought to other means for reducing water losses along the suburban routes and, in particular, for searching for opportunities for converting certain villages and organizations over to other water supply sources which, because of their limited supplies, are of no interest to Yerevan.

Without having to refer to accurate computations, it can be stated with confidence that the implementation of these measures will furnish the city additionally with no less water than the installation of another water line of average capacity.

Decreasing Excessive Use of Water

Yerevan KOMMUNIST in Russian 11 Jul 80 p 4

[Article by R. Meliksetyan: "Once Again Concerning Water for Yerevan"]

[Text] Water -- the elixir of life or not? If one is to judge by the place it occupies in the vital activities of our organism and in our daily routine, then without hesitation a positive reply can be given for this question. But, on the other hand, if man cannot exist without water, then why is it that he squanders it in a thoughtless and useless manner?

In raising the problem in this manner, it is by no means our intent to divert the reader into a jungle of abstract reasoning. Today, mankind is fully aware of the possible danger of being left without drinking water in the future and thus measures are being taken to prevent this from happening. There are countries which import fresh water, there are plans for gigantic water lines stretching for thousands of kilometers and methods have been developed for purifying sea water.

Certainly, the situation has not reached this extreme in our republic. However, one need not be a competent specialist to realize that the limited water resources of Armenia render it senseless to continue to increase the volume of water being withdrawn from the depths or to improve the supply of water for the population by means of a mechanical increase alone. Today, with Yerevan on the whole being supplied with an adequate quantity of water, the foremost concern has to do with ensuring that it is used in a judicious and thrifty manner and that senseless losses are prevented.

Almost one third of the city's drinking water is being used by industry for technological purposes. This is certainly inevitable in such branches as the food and meat and dairy industries; however, in other spheres large reserves are available for reducing the use of drinking water.

Last year, the plans called for 12 large-scale measures to be carried out in this regard. This included the conversion of enterprises over to the use of technical water, changes in the technological systems and the installation of a circulating water supply system. The implementation of this program would make it possible to release no less than 200 liters of drinking water per second. However, the overwhelming majority of the measures called for still remain on paper. In particular, the water supply system for the population was adversely affected by a delay in solving the problem of technical water at the Nairit Scientific-Production Association and in placing a technical water line in operation for light industry enterprises in Shaumyanskiy Rayon.

Production is production and certainly it would be wrong to require the leaders of these installations to curtail their output until such time as new water lines are placed in operation. But how is it possible to understand an administration, public organizations or the collectives of plants and factories where the water is being utilized in excess of any limits and at times -- using illegal methods?

A hydraulic pump plant, in the absence of any authorization, provided itself with a second illegal line leading off a mainline. On two occasions, representatives of the Vodokanal Main Inspectorate composed a document and closed down the 3-inch pipe. But even this did not cool the ardor of the water poachers.

During February alone (by no means the peak of the season), the Yerevan Canning Plant consumed 39,000 more cubic meters of water than called for in the plan.

At the Metiz Boiler Plant, there are two pipelines laid out next to one another -- one for drinking water, the other for technical water). However, the compressor cooling system is connected up to the drinking water line. Moreover, during an inspection it was discovered that the compressor was undergoing repair work for a period of many days and during this period nobody thought to turn off the powerful flow of water.

Upon becoming acquainted with these facts, one automatically wonders why it is that bonuses are awarded to production workers for realizing economies in the use of raw materials, electric power and fuel and yet no punishments are handed down for the squandering of drinking water. Moreover, the bonuses are paid out to specific individuals, whereas the infrequent fines for inefficient water usage are paid out of state resources.

The executive committees of rayon soviets are acting in a strangely passive manner with regard to this important problem. By no means has the Vodokanal Administration exhausted all of the opportunities available for combating the violators of water regimes. For example, why did it not request the rayon party committees, during bureau meetings, to discuss the problem of those enterprise leaders who were guilty of allowing water to be squandered and plundered?

Another effective measure for improving the supply of water for the population is that of constructing daily control basins at the enterprises. The erection of just 12 such installations would make it possible, during the peak daytime period, to realize a daily economy of 6,500 cubic meters of drinking water. But, as yet, not one of these installations has been placed in operation and the majority of them are not being built -- for lack of financing.

During the past few years, approximately 200 industrial enterprises throughout the capital drilled their own wells for obtaining underground water and they are using this water for technical purposes. The measure turned out to be effective, as the city obtained approximately 350 additional liters of water per second. In particular, the use of artesian water at the Machine-Tool Plant imeni Dzerzhinskiy was organized very well. This plant is now consuming water at a rate that is considerable less than the limit. At an experimental factory for musical instruments and accessories, two reliable filters were installed and underground water was employed extensively.

But for the city on the whole, the operation of wells involves technical difficulties; there is no organization responsible for the installation and repair of pumps and filtration units, or for correcting breakdowns in the system. Quite often the defective artesian sources serve only to divert one's eyes, while the plant continues to use drinking water.

With each passing year, the number of privately owned automobiles in our city continues to increase. In the majority of instances, the washing of these vehicles is left to the ingenuity and inventiveness of the owners themselves. And when there is a drinking water hose nearby -- it is difficult to avoid the temptation to use this procedure, as the saying goes, "quickly and cheaply."

We have only one method for combating this widespread phenomenon -- the creation of washing stations at various points throughout the city based upon the use of artesian water and to have the organs of Gosavtoinspektsiya [State Automobile Inspection] exercise control over the actions of the automobile owners.

This article is being published during the hot summer period, at which time we are beginning to forget the past unpleasant winter season, and for the future... It is precisely from the standpoint of future winters that I wish to touch upon the work of the city's heating supply enterprises. In accordance with the established norms, the boilers of Yerevan must consume approximately 250 liters of water per second during the winter period. However, an inspection carried out during this past winter revealed that they exceeded this figure by a factor of 3-4. A boiler on Orbeli Street No. 65 used 35 liters of water per second instead of 7 and the central boiler of the Norskiy group used 33 liters instead of 11. At many similar installations in the imeni 26 Komissarov and Leninskiy Rayons, it was not possible to carry out such computations -- the water meter "suddenly" became inoperable. And in a boiler at No. 10-12 Shiraki Street, the problem went even farther -- in addition to the existing line, an illegal and secret hot water supply line was also installed. Is it necessary to mention how such concern for "their" tenants, during this waterless winter period, exerted a strong effect on the water regime of the city?

It is by no means an accident that such an abundance of facts and figures are included in this article. If to this we also add the unfavorable situation with regard to the internal water line network, the ruthless squandering of water for the cooling of beer and melons and different types of leakage -- then one draws a paradoxical conclusion: the majority of residents in our city of 1 million people, to the limit of their capabilities and potential, are doing everything possible to ensure that the "elixir of life" always remains in short supply.

But do we not have the Vodokanal Administration -- an organization responsible for ensuring a normal supply of water for the city, for controlling water consumption and for exposing violators of the system? Yes, there is such an organization and by no means do we wish to limit its responsibility to monitoring shortcomings in the work of supplying the city with drinking water. In the work being performed by Vodokanal there are many shortcomings and derelictions which strongly affect the rhythm of life in Yerevan. Here there is a poor dispatcher service, delayed reaction to complaints sent in by the population and inconsistencies in dealing with illegal water users, individuals who fail to make their payments and with above-normal interruptions in the operation of pumps at leading installations.

Objectivity, however, demands mention of the fact that the forces of Vodokanal alone will not solve the problem. Particularly so in view of its rather humble potential and resources. In an article on a similar subject, published in our newspaper 1 year ago, it was mentioned that the administration required assistance in the form of personnel for supplying instruments and equipment. These problems are still on the agenda today. Actually, how is it possible to respond to appeals by the population in a timely manner if a rayon with a population of 150,000-200,000 individuals has only one motor vehicle at its disposal, and not a modern one at that? Or there is still another fact: an enterprise of a water network in a large city, over the past 6 years, did not receive one Belarus' excavator, without which it is impossible to carry out good repair work.

More attention must be given to the needs of Vodokanal; the administration must be provided with everything it requires for the regulation and normal functioning of the city's water supply network, particularly in view of the fact that this is called for in a decision handed down by the government.

> Eleven powerful sources supply Yerevan with life-giving moisture both day and night. Yet the city is not receiving enough water. Nor will this problem be fully solved unless and until each of our residents at his working position and in his daily routine, learns how to conserve and make proper use of this priceless gift of nature. Until this is done, the problem of regulating the water supply will not be completely solved.

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REGIONAL DEVELOPMENT

PROGRESS, COMPLETION OF THE ARPA-SEVAN WATER TUNNEL

Moscow PRAVDA in Russian 22 Mar 81 p 3

[Article by Yu. Arakelyan, Armenian SSR: "Arpa Rushes To the Sevan"]

> [Text] More than 50 years ago, on 16 March 1924, a report appeared in Pravda on the opening of a tunnel on the Shirakskiy Canal. A distance of slightly more than 2 kilometers represented a great labor victory in the life of the young republic. This first of its kind opened the way for other and larger underground hydraulic engineering installations.
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> Yesterday, a tunnel 48.3 kilometers in length was placed in operation. Through it rushed the Arpa River into the Blue Lake Sevan! The greeting by Leonid Il'ich Brezhnev was welcomed with great enthusiasm by the builders.
>
> For more than 15 years the people have been forcing the underground canal through the mountains. It is for good reason that the construction of this hydraulic engineering installation is being referred to as a route of courage. At a height of 1,900-2,600 meters above sea level, the builders boldly and diligently attacked the rock meter after meter, advancing over the complicated sectors of the track. The young mountains of volcanic origin from time to time displayed their "character": mountain pressure, temperatures and gaseous conditions developed in the faces and fountains of hot air were encountered... Nevertheless, the collectives of Arpasevanstroy of the Trans-Caucasus SU [Construction Administration] of the All-Union Gidrospetsstroy Association and the Spetsshakhtostroy Trust honorably endured the difficult trials in an "outstanding" manner and turned over the complicated installation for operation, a facility unequalled in international tunnel construction practice. The heroic labor performed by the workers who laid out the water route will be remembered forever by their descendants.

"The unique nature of the tunnel" commented the director of Armgidroproyekt, K. Babayan, "concerned not only its length and the complicated conditions encountered during the tunnelling work. For the first time in domestic hydraulic engineering tunnel construction, the length of a working passed by one face exceeded a 6 kilometer line. Seven out of eleven faces were passed through vertical shafts ranging in depth from 190 to 670 meters, with absolute accuracy in the joining of the meeting faces being ensured. Solutions were found for such complicated tasks of underground construction as ventilation of remote and extended workings under conditions involving severe gaseous levels and temperatures which exceed to a considerable degree those permitted by the rules of safety. Structures capable of withstanding unprecedented amounts of mountain pressure -- on the order of 400 tons per square meter -- were developed, manufactured and introduced into operations."

Beyond any doubt, the Arpa-Sevan Tunnel is a great success of Soviet scientific-technical and engineering thought. All of this became possible as a result of close collaboration between the scientists, planners and specialists attached to many scientific research institutes, planning and construction organizations throughout the country. As a result of the experience accumulated in the erection, in particular, of such projects as the Sevano-Razdan and Vorotan cascades of a GES. As a result of the assistance furnished by mine and tunnel builders of the fraternal nations of our homeland and mainly by the great Russian people. On the route of courage, distinguished work was performed by such tunnel workers as G. Mirzoyan, V. Pershakov, Ye. Seropyan, A. Savchenko, S. Boleyan, I. Guseynov, M. Gongadze, R. Polupan, M. Choba and many others. The people of 29 nationalities joined together as one family in carrying out this project.

Success in carrying out this construction work was also promoted by the use of leading technological methods for production operations and highly productive mine-sinking, concrete laying and transport equipment and mechanisms.

"Here is an incomplete list of work carried out during the construction phase" stated the permanent chief of Arpasevanstroy, A. Sarkisyan, "approximately 1 million cubic meters of rock workings, one third of a million cubic meters of concrete, reinforced concrete, tubing, units, hundreds of kilometers of railroad track and ventilation, drainage and air-supply pipelines, electric cable, new automobile roads, housing settlements..."

The well known health resort of Dzhermuk is surrounded by the white peaks of mountains. On the approaches to it, the mirror of the Kechutskiy Reservoir is today covered by an icy crust; the reservoir contains water from the mountainous Arpa River. From this point, from the man-made lake, the life-giving artery rushes to the Sevan. The size of the tunnel is such that a subway train could pass through it here.

On the eve of the release of the water, I again visited the Kechutskiy sector. It was here, at the head of the tunnel, that the history of the Arpa-Sevan began. It was here that the first explosion was heard and it was here that the steel jaws of powerful mechanisms took bites out of the rock. Khachik Grigoryan was one of the first to commence the heroic work.

"The silence is unusual" he smiled, "It is difficult to believe that it all lies behind."

The engineer in charge F. Davtyan, excavator operator R. Arutyunyan and bulldozer operator P. Arakelyan all feel a sense of sadness as they part with their "creation."

Together with the chief of the sector, Kh. Khodzhoyan, we go to the entrance portal. The water-receiving unit has already been tested. The twin steel slabs of Lock No. 1 are in a state of "battle" readiness. The hydraulic engineering construction personnel have already been replaced here by the operations personnel. A basalt block bearing the inscription "A memorial will be erected here for the heroic builders of the tunnel" has been installed above the portal.

Beyond any doubt, the hydraulic engineering builders fulfilled their task in an "outstanding" manner: an annual transfer of 250 million cubic meters of Arpa water into Lake Sevan has been ensured!

The fate of one of the prettiest water areas in the world, one which became catastrophically shallow during the past decade, has indeed been astonishing. Worthy of brief mention is the fact that during the years of the initial five-year plans many plants and factories were erected on Armenian land, which did not have its own fuel and energy resources. A large amount of electric power was required for the production of chemical products, non-ferrous metals, machines, machine tools and fabrics. Yes and water was required for irrigating the fields. The Sevano-Razdan irrigation-power engineering cascade was built. Before long the republic began receiving electric power and irrigation water in the required amounts. The Ararat Valley was transformed into a blossoming kray. Lake Sevan proved to be of assistance in building the new socialist Yerevan and other cities and settlements and in installing many kilometers of railroad and motor vehicle routes.

However, the burden of the power engineering cascade proved to be very severe for the lake. The water level of Lake Sevan fell by 18 meters. This affected the animal and plant life in the basin. Further intensive use of the water could lead to irreversible processes. For all practical purposes, the lake ceased to exist as a source for fresh water.

The search undertaken to find methods for solving the Sevan problem promoted the creation of a new power engineering base. A TETs which operates on natural gas, an atomic electric power station and hydroelectric power stations on other water sources made their appearance on an industrial map of Armenia. A number of reservoirs were built for the purpose of alleviating the Sevan and a program was followed aimed at developing low power consumption branches of industry in Armenia. The idea of creating a complicated hydraulic engineering installation for diverting the runoff from the Arpa River into the lake arose and warranted attention. And today, with the tunnel in operation, it can be said that the initial steps for solving the Sevan problem have already been taken: the water level is being retained at the existing mark.

Scientists have computed that the task of raising the level of the lake by 1 meter requires that its volume be increased annually by approximately 1.3 billion additional cubic meters of water. And in order to restor the thermobiological regime, the lake's level must be raised by 4-5 meters. The specialists believe that this task can be carried out completely.

The decrees of the CC CPSU and the USSR Council of Ministers entitled "Measures for Further Developing and Improving the Efficiency of Irrigation Farming in the Armenian SSR" and "Measures for Conserving and Ensuring the Rational Utilization of the Natural Resources of Lake Sevan" called for a number of aquicultural and other measures to be carried out aimed at raising the level and improving the ecological regime of the basin. The plans call for 16 reservoirs to be built, a portion of the water supplies of which will be directed to the blue Lake Sevan. These reservoirs will be of assistance in realizing an economy of approximately 1 billion cubic meters of water annually. It bears mentioning that the importance of the Arpa-Sevan Tunnel will increase even more following the placing in operation of a complex of installations for diverting the runoff from the Vorotan River into the Kechutskiy Reservoir. The implementation of the measures outlined by the party for protecting the resources of Lake Sevan, as discussed during the 26th CPSU Congress, will undoubtedly require considerable expenditures of time and human labor. But even today it can be stated with confidence that the miracle of nature -- Lake Sevan -- will live forever and serve people in the future.

The building of the tunnel served as a fine school for the Yerevan subway builders, who only recently placed in operation the first phase of a line.

The construction work has promoted the rapid economic and social development of the republic's high mountainous regions. Branches of industrial enterprises have appeared in remote villages and the outflow of the population has come to a halt.

The tunnel is also of great importance from the standpoint of attracting new irrigable lands into agricultural use. The tunnel will make it possible to slake the thirst of thousands of hectares and to save fields from succumbing to droughts.

The Kechutskiy Sea, which decorates a beautiful corner of the mountainous kray, adjoins the southern portion of the resort city of Dzhermuk. In addition to its primary purpose, the reservoir will become a wonderful recreation area for the republic's workers and for many tourists and guests of the health resort. The initial steps have already been taken in this regard. On the shore, surrounded by an emerald forest and comprising the former boarding houses of the hydraulic engineering builders, a holiday hotel of the Armelektrosvet Association and a mechanical plant was opened today. Tomorrow, beyond any doubt, work will commence on new buildings for health resorts in the same area. In short, the construction of the tunnel has promoted the complex solving of many of the republic's national economic tasks.

Already the command has been issued: "Raise the locks!" I mentally picture the face of one of the first tunnel workers, Khachika Grigoryan, as he presses down on a simple button in the Kechutskiy Sector. The Arpa water rushes into the tunnel and before long it reaches the outlet portal in the Martuninskiy Sector. A delegation of workers from all corners of the republic has assembled here for the celebration.

The roar of the boiling current is heard. It draws nearer and nearer. Finally, with a roar the river bursts forth from the underground cave and rushes to the blue lake.

A miracle has been accomplished, carried out by our heroic Soviet workers. The Sevan will endure for both today's and tomorrow's generations!

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AGRO-ECONOMICS AND ORGANIZATION

KOLKHOZ, SOVKHOZ ECONOMIC RELATIONS WITH REGIONAL SYSTEMS DISCUSSED

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 3, Mar 81 pp 44-46

[Article by K. Goliyat: "On Equivalence of Economic Relations Between Kolkhozes and Sovkhozes With Enterprises of Goskomsel'khoztekhnika"]

[Text] During the July (1978) Plenum of the CC CPSU, Comrade L.I. Brezhnev stated: "The comprehensive intensification of agriculture is expanding objectively and strengthening its links with those branches of industry which are supplying the rural areas with material and technical resources and which are processing the raw materials. Under such conditions, a requirement exists for well organized collaboration among the partners. Unfortunately, we have still not been able to completely eliminate certain negative phenomena associated with this problem. Such negative phenomena include the growth that is taking place in the prices for the means of production being supplied by industry and also the high cost of services being provided for the agricultural enterprises, factors which are serving to raise the production costs for agricultural products and lower the profitability of the kolkhozes and sovkhozes.

At the present time, the organization of cost accounting relationships in kolkhoz and sovkhoz production is expected to orient the agricultural enterprises towards achieving high final results, associated with the fulfillment of their economic functions and reduced expenditures of labor, material and monetary resources. These requirements are achieved by means of definite economic relationships in monetary form.

The materials obtained from studies of the monetary relationships of agricultural enterprises in a number of oblasts in the Ukrainian SSR over the past few years testify to the fact that, within the overall volume of operations, the computations for commodity-material values between kolkhozes, sovkhozes and enterprises of Goskomsel'khoztekhnika constitute a considerable proportion, more than one fourth.

In this regard, interest is being displayed in the problem of the equivalence of economic relations between kolkhozes and sovkhozes with the regional systems of Goskomsel'khoztekhnika, which serve as the principal intermediary between industry and agriculture in the matter of deliveries of material and technical resources.

The essence of the new system introduced in 1974 for the sale of tractors, agricultural machines, mineral fertilizers and other material and technical resources by enterprises of Goskomsel'khoztekhnika, with the delivery of the goods sold to the consumer farm on a prepaid basis, consisted of placing the kolkhozes and sovkhozes on an equal basis with regard to the expenditures for acquiring such resources. Mark-ups added on to the wholesale prices for these goods are presently being collected from the kolkhozes and sovkhozes. For example, in the Ukrainian SSR, mark-ups have been established for the delivery of tractors and agricultural machines in the amount of 11.6 percent of their wholesale price, mineral fertilizers -- 6 rubles per ton and lime materials -- 4 rubles per ton.

In agricultural production, the expenses for industrial output (mineral fertilizers, spare parts, fuel, lime materials) and also amortization deductions, constitute a considerable portion of the production expenditures at the present time. The mark-up level for industrial products delivered to agricultural consumers determines to a considerable degree the production costs for the agricultural products and, in the final analysis, the profitability level for the kolkhozes and sovkhozes.

Thus the question of the mark-up level for means of production and services is a fundamental one with regard to the economic relations of kolkhozes and sovkhozes with the enterprises of Goskomsel'khoztekhnika. The financial activities of enterprises of Goskomsel'khoztekhnika, as an intermediary between industry and agriculture, must be directed towards lowering both the mark-ups and the distribution costs so as to achieve a profitability level for the supply activities which will not differ sharply from the average profitability level for kolkhoz and sovkhoz production. In this regard, the mark-ups must conform to a greater degree to the actual distribution cost level, for specific groups of material and technical resources or types of services. This would make it possible to lower, to a maximum degree, the prices for the material and technical resources for agriculture.

Let us examine the level for mark-ups and distribution costs, their structure and also the profitability level for the commodity-supply activities of Goskomsel'khoztekhnika enterprises, under prepaid conditions to the consumer farm, during the past 3 years, using L'vovskaya and Ternopol'skaya Oblasts in the Ukrainian SSR as examples.

An analysis of the income from commodity-supply activities at the L'vovskaya Oblast Goskomsel'khoztekhnika Association during the 1977-1979 period has revealed that the actual mark-up level for all types of goods sold, under prepaid conditions to the consumer farm, amounted to 12-13 percent of the commodity turnover and at the Ternopol'skaya Oblast Association -- 12-14 percent. This is a rather high level when one considers that the mark-ups for the delivery of tractors, agricultural machines and materials, the proportion of which amounts to 80-90 percent of the overall commodity turnover, were established in the amount of 11.8 percent. For individual types of goods delivered, the mark-up level is considerably higher. Thus the mark-ups for the L'vovskaya Oblast Association, for mineral fertilizer deliveries during 1977, amounted to 23.6 percent, for 1978 -- 23.8 and for 1979 -- 23.5 percent. For the delivery of lime materials, they amount to 170-190 percent, since these materials are procured on the territory of L'vovskaya Oblast. A similar situation with regard to deliveries of the mentioned goods prevails at the Ternopol'skaya Oblast Goskomsel'khoztekhnika Association.

Over the past 3 years, the actual average mark-up level for the sale of tractors, agricultural machines and materials to the Goskomsel'khoztekhnika associations studied fluctuated on the order of from 9 to 11 percent. The mark-up level for the mentioned goods and also the total amount of income from their sales are determined by both the volume and the structure of the commodity turnover, particularly by the proportion of costly equipment. In this regard, it is considered advisable to differentiate the mark-ups for the specific groups of material and technical resources in conformity with the actual distribution costs. It was established that during the period under review the actual distribution cost level for all types of goods sold, under prepaid conditions to the consumer farmer, amounted to 10-12 percent. More than one third of the total amount of distribution costs (40-45 percent) involved transportation expenses and this derived from the considerable distances separating the suppliers from the consumers. The high proportion of expenses for loading and unloading work (more than 30 percent) is the result of insufficient mechanization of the processes involved in the unloading, sorting and loading of goods at a storehouse.

In recent years, a trend has been observed towards growth in unproductive expenditures, such as general farm expenses, expenses relating to commodity-supply activities and withholdings for the construction of bases and for the discount fund.

In accordance with the existing method, the profitability level for commodity-supply activity is defined as the ratio of profit to distribution costs, which include the total amount of witholdings for the construction of storehouses and for the discount fund for goods. It is our opinion that the mentioned witholdings do not apply to the distribution costs directly associated with the commodity-supply activities of the Goskomsel'khoztekhnika enterprises. Their inclusion in the overall distribution costs reduces both the total amount of balance profit and also the true profitability level. In the final analysis, this distorts both the financial results of the commodity-supply activity, under prepaid conditions to the consumer farm, and also the overall results of the financial-economic activities of the Goskomsel'khoztekhnika enterprises.

Actually, the mentioned witholdings are concealed profits, which are used for financing capital investments in construction and for equipping storehouses and here they constitute one third of all sources. As a result of growth in the volumes of commodity turnover at Goskomsel'khoztekhnika enterprises, the amount of witholdings is increasing annually. Thus the witholdings at the L'vov Association for the construction of bases in 1979 increased by 5 percent above the figure for the previous year and for the Ternopol' Association -- by 10-12 percent compared to 1977. The witholdings for the construction of bases constitute a considerable proportion of the overall volume of distribution costs of Goskomsel'khoztekhnika enterprises.

In connection with the partial transfer of the volume of commodity turnover over to the organizations of Soyuzsel'khozkhimiya by the Goskomsel'khoztekhnika enterprises, we consider it advisable to abolish the mentioned witholdings. Indeed, during the past decade the material-technical base of the Goskomsel'khoztekhnika enterprises has been strengthened considerably and thus, under conditions involving a reduction in the volume of commodity turnover, there is no longer a need for new construction or the equipping of storehouses.

The introduction of centralized deliveries of goods to kolkhozes and sovkhozes, on a prepaid basis for the consumer farms, has raised considerably the expenses involved in the delivery of goods. During the past 3 years, the proportion of these expenses with regard to the overall volume of distribution costs at the L'vov Association of Goskomsel'khoztekhnika amounted to approximately 30 percent and at the Ternopol' Association -- 35-40 percent. A trend towards growth in these expenses is being observed.

An analysis of the financial results of commodity-supply activities, under prepaid conditions to the consumer farm, of Goskomsel'khoztekhnika enterprises in L'vovskaya and Ternopol'skaya Oblasts during the past 3 years has revealed a high profitability level for individual types of services. Even when the computations are carried out using the existing method (including expenses for the construction of bases and for the discount fund in the distribution costs), the profitability level for the delivery of mineral fertilizers at the Ternopol' Association in 1977 was 26 percent, in 1978 -- 21 and in 1979 -- 29 percent. If we exclude the witholdings for the construction of bases and for the discount fund from the overall volume of distribution costs, then the profitability level reaches 50 percent. The profitability level for the delivery of lime materials is even higher.

The profitability indicator for all of the commodity-supply activities carried out at the L'vov Association in 1977, computed using the existing method and under prepaid conditions to the consumer farm, amounted to 7.5 percent, in 1978 -- 8.7 and in 1979 -- 2 percent. However, if we exclude the witholdings for the construction of bases and for the discount fund from the distribution costs, then the level of profitability for the mentioned years at the L'vov Association fluctuates from 17 to 25 percent and at the Ternopol' Association -- from 11 to 14 percent.

An analysis of the financial activities of the Ternopol' Association of Sel'khozkhimiya, which was organized in 1979, has revealed that the profitability level for commodity-supply activities last year, under prepaid conditions to the consumer farm, amounted to 23 percent and for individual types of services this indicator was considerably higher.

At the same time, considerable growth is being observed in production expenses at the kolkhozes and sovkhozes, while the profitability level for agricultural production is decreasing.

In examining the nature of the economic relations of kolkhozes and sovkhozes with the regional systems of Goskomsel'khoztekhnika, we must necessarily study the form of these relationships. Under conditions involving our modern economic policies, aimed at improving the system of planning, developing the economic methods of management and strengthening cost accounting relationships, a very important role is played by the correct organization of contractual relationships.

The principal contracts concluded between agricultural enterprises and enterprises within the Goskomsel'khoztekhnika system include an agreement for the repair of agricultural equipment and one for providing the kolkhozes with engineering and technical services.

A special type of contract for agricultural enterprises is a contract-order for the purchase of agricultural equipment and other material and technical resources, which the kolkhozes and sovkhozes procure based upon the production requirements and financial potential of a farm for a period of 1 year. The preparation of the mentioned contract is preceded by the farms submitting preliminary requests for material-technical supply to enterprises of Goskomsel'khoztekhnika. The parties involved do not bear property responsibility for non-fulfillment of the orders and the orders themselves merely contain general data on a farm's requirements for material and technical resources.

Let us discuss in greater detail the contractual relationships between kolkhozes and sovkhozes on the one hand and enterprises of Goskomsel'khoztekhnika on the other.

The intensive use of the machine-tractor pool of farms is dependent upon the schedules and costs established for the repair of machines and equipment.

In order to ensure observance of the repair schedules and in the interest of raising the responsibility of the Goskomsel'khoztekhnika enterprises, the plans initially called for them to pay a fine amounting to 0.2 percent of the cost of the repair work and also a penalty amounting to 8 percent of the cost of all work not completed on schedule. Subsequently the amounts of these sanctions, for non-fulfillment of contractual obligations, were increased. Thus, for failing to observe the repair schedules for machines and units, the organizations of Goskomsel'khoztekhnika must pay the kolkhozes and sovkhozes a fine amounting to 2 percent of the cost of the work. Despite the numerous instances of machine repair schedules not being adhered to, civil suits are not being filed against the enterprises of Goskomsel'khoztekhnika.

The weakening of control by the kolkhozes over the correctness of the prices and rates used in the computations with Goskomsel'khoztekhnika enterprises is caused to a considerable degree by the complicated nature of the computations for material and technical resources delivered and services performed. Numerous price lists exist at the present time for the material and technical resources and work performed. However, for all practical purposes the kolkhozes do not have wholesale price lists or the supplements for them, nor are they capable of exercising control over the correctness of the prices and rates.

The enterprises of Goskomsel'khoztekhnika participate partially in retail trade. True, the proportion of such trade compared to the overall volume of production-trade activity is negligible -- 5-6 percent. In addition, the kolkhozes are supplied with light implements and also farm goods through consumer cooperation. This double-channel system of supply quite often leads to the development of debtor's liabilities at the kolkhozes, as a result of advance transfers and the untimely selection of goods.

The chief shortcoming of the diverse agreements established for regulating relationships between the kolkhozes and enterprises of Goskomsel'khoztekhnika is that of weak responsibility on the part of the parties involved for violations of the conditions of the agreement and for the inefficient use of resources. Because of this circumstance, those agreements which regulate the relationships of kolkhozes with the enterprises of Goskomsel'khoztekhnika are in many instances only formal in nature.

We are of the opinion that, in addition to the several types of agreements being employed at the present time, which only in general form regulate the various aspects of the economic relationships between the kolkhozes and Goskomsel'khoztekhnika, a single agreement should be introduced for regulating the rights and responsibilities of the sides when violations occur.

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GOALS OF RSFSR NONCHERNOZENM ZONE DECREE STRESSED

Moscow SEL'SKAYA ZHIZN' in Russian 16 Apr 81 p 1

[Editorial: "The Nonchernozem Zone--The Whole Country's Concern"]

[Text] At Sosnovets Village in Ivanovskaya Oblast, more than one hundred families gave house-warming parties in recent years at the farm center of Iskra Kolkhoz; a House of Culture has been opened with a young people's cafe and gymnasium. And the Udmurt Perevoznoye Village--the center of Novaya Zhizn' Kolkhoz and the farm centers at the sovkhozes of Belousovskiy on Kaluga land and Permskiy on this side of the Urals as well as hundreds of other kolkhoz and sovkhoz villages in 29 oblasts and autonomous republics of the Russian Nonchernozem Zone are now truly experiencing a rebirth.

"The CPSU Central Committee and the Soviet government," Comrade L.I. Brezhnev said at the 26th CPSU Congress, "have outlined and are implementing wide-scale measures for the development of the Nonchernozem Zone." And renovated villages, ennobled by the labor of field reclaimers, agricultural enterprises of the industrial type springing up here, a growing number of kolkhozes and sovkhozes producing high yields of crops, milk and livestock weight gains--all this is convincing evidence of large-scale activity aimed at the practical realization of an important state task.

A new confirmation of the consistency of the party's policy of a sharp rise of the productive forces of this region in the center of the country exists in yesterday's publication of the decree of the CPSU Central Committee and the USSR Council of Ministers "On Further Developing and Boosting Efficiency of Agriculture of the RSFSR Nonchernozem Zone During 1981-1985."

Studying this document, the Soviet people note with satisfaction that in the execution of the decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures for Further Developing Agriculture of the RSFSR Nonchernozem Zone" adopted in 1974 definite work has been done here on further boosting agricultural production and fortifying its material-technical base as well as improving the social-economic conditions of the lives of farm workers.

During the 10th Five-Year Plan 1.6-fold more capital investment was allocated for the development of the region's agriculture than in the preceding five-year plan. Fixed production capital grew 1.5-fold, power capacity--40 percent and deliveries of mineral fertilizers and liming materials--35 percent. Kolkhozes and sovkhozes have put into use 1.3 million hectares of drained and irrigated lands; on an area of 1.9 million hectares land improvement work has been carried out. Dwellings have been built with a total floorspace of 22.8 million square meters and general educational schools with 490,000 places, preschool institutions with 178,000 places and almost 30,000 kilometers of hard-surface roads, hundreds of new cultural centers, medical, trade and consumer-service facilities. The production of grain, meat, milk and eggs has increased. All these are the results of a systematic approach to the transformation of the Nonchernozem Zone where economic and social problems are being solved as one complex, still another proof of the powerful constructive forces of the party's present agrarian policy.

At the same time, the goals set for the development of agriculture of the RSFSR Nonchernozem Zone, as pointed out in the decree, have not been completely fulfilled. So far the production of farming and animal-husbandry products in determined volumes, the necessary development of specialization and concentration of agricultural production and the use of the opportunities provided by agroindustrial cooperation have not been secured; the primary allocation of funds for measures aimed at boosting efficient use of land has not been achieved everywhere. Attention is still not being sufficiently directed to the solution of the most important problems of this zone's economic and social development.

The new decree specifies a broad system of measures whose aim it is to ensure by 1985 a 30-percent increase of agricultural gross production at kolkhozes and sovkhozes compared to the level attained in the 10th Five-Year Plan. This is the chief guiding direction for farmers and animal-husbandry workers and for party, soviet, trade-union and operational leaders responsible for organizing and heading the competition for the achievement of new advances. The road to success lies in further intensification of agriculture, wide-scale land improvement, comprehensive mechanization, use of chemical agents, specialization and concentration of agricultural production, interfarm cooperation and the introduction into production of the achievements of science, technology and advanced experience.

The outlined positions are being achieved by further growth of capital investment, increased fund availability and the power-worker ratio of agrarian production. Whereas in the 10th Five-Year Plan capital investment for the development of agriculture of the Nonchernozem Region amounted to 31.2 billion rubles, in the 11th Five-Year Plan it will reach 39.3 billion rubles. Deliveries are planned for a large quantity of equipment and fertilizers for agriculture and the Main Administration of Nonchernozem Water Management Construction. Land-improvement work will be expanded, which opens up new opportunities for yield growth of agricultural crops and better utilization of each hectare of land.

Builders have a high responsibility for the successful achievement of new limits. In the 10th Five-Year Plan, ministries and departments engaged in contract work have not achieved the necessary growth of capacities of construction organizations and have not met the targets for the construction of agricultural installations. Today the goals have become even more difficult. The total volume of construction and installation work has grown significantly. There are to be built many new enterprises and existing capacities are to be modernized and the start-up of nonproduction facilities will be increased 1.7-fold in volume. There will have to be turned over 33.5 million square meters of housing alone, 230,000 square meters of preschool institutions and 271,800 places in terms of clubs and houses of culture.

There can be no doubt that the solution of the task is made easier by the fact that the construction and expansion in this zone of industrial enterprises not connected with agriculture and the processing of agricultural production are being maximally limited. The capacities of contracting organizations are being concentrated on the erection in agricultural localities of dwellings and educational, cultural and consumer-use facilities and also agricultural enterprises and related sectors of industry. But at the same time, every builder--from worker to minister--is called upon to work with all his energies and to remember well the words of Comrade L.I. Brezhnev to the effect that that the transformation of this large region depends first of all on how successfully the construction program is carried out.

It was especially emphasized at the 26th Party Congress that the tasks for the development of the Nonchernozem Zone should be solved with the joint efforts of all the republics. The builders and land-reclamation workers of Uzbekistan Belorussia and Lithuania are constantly increasing their contribution to the common cause. It is important for the other republics, krays and oblasts as well to act energetically and in a friendly manner. The Russian Nonchernozem Zone must sense year to year the growing concern of the whole country.

This concern is shown in each paragraph of the adopted decree, whether it applies to expansion of road construction or development of the capacities of the processing industry, increased reliability of electric supply or an increase in the volume of consumer services, or any other problem. Tens of union and republic ministries and departments as well as local organs have received concrete assignments, the fulfillment of which must be under the constant control of party committees and our entire public.

The answer of agricultural workers and all persons taking part in the transformation of the Nonchernozem Zone to the adopted decree must be still broader launching of the competition for the fastest possible attainment of new positions. The goal, set by the 26th CPSU Congress, is to transform the RSFSR Nonchernozem Zone into a region of highly productive agriculture and animal husbandry, and this will be achieved!

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TILLING AND CROPPING TECHNOLOGY

AGRONOMISTS PROVIDE ADVICE FOR OPTIMUM CROP YIELD

Moscow SEL'SKAYA ZHIZN' in Russian 10 Apr 81 p 2

/Article by specialists of the USSR Ministry of Agriculture and scientists of the All-Union Academy of Agricultural Sciences imeni V. I. Lenin: "Spring and the Farmer's Tactics"/

/Text/ When accomplishing the tasks set by the 26th congress of our party in the area of farming, the attention of the agronomical service and of all field workers is focused primarily on the system approach to problems of agricultural technology, improvement in zonal scientifically substantiated systems of farming, implementation of measures to increase land fertility, a better utilization of available resources and mobilization of internal reserves. A creative approach to this matter is needed at all the stages of field work. In connection with this we consider it necessary to draw the attention of farmers to some aspects of agronomical tactics under this spring's conditions.

Winter crops. In most of the country's zones they came out from wintering better than usually. They renewed vegetation earlier. At the same time, the spread of pests (carabid, frit flies and leaf beetle of the genus Lema) and diseases (rust, powdery mildew and root rots) of plants is noted in a number of southern regions. The wintering conditions promoted the preservation of wintering weeds and the earlier renewal of vegetation, their intensified growth. In the nonchernozem zone here and there winter crops are weakened owing to their prolonged stay under a thick snow cover in thawed soil and the increased expenditure of plastic substances connected with this.

In this situation it is important to refine the agricultural technology of care in order to fully utilize the potentials of well-developed plants and to more efficiently use the high reserves of spring moisture in soil. Under this spring's conditions it is possible to widely maneuver the dressing time. Nevertheless, it is first of all necessary to apply fertilizers to good crops, crops with a low content of mineral nitrogen in soil and weakened crops. Where, owing to a disturbance in the correlation of nutrients, winter crops have formed an excessive vegetative mass, it is necessary to apply nitrogen by the split method and to dress crops with compound fertilizers by the root method at a later date.

The following retardants should be applied on a larger scale: chlorocholine chloride to winter wheat crops and campozan to winter rye crops. The resources of the latter have increased considerably, which creates the possibility of preventing the lodging of winter rye on large areas and of facilitating its harvesting. In general, top-priority attention should be given to the care of this crop. The point is that last fall many farms did not succeed in fulfilling the rye sowing plan. This means that it is necessary to compensate for the harvest through an improvement in agricultural technology.

Overseeding or resowing should be carried out on highly thinned out and dead crops and measures should be taken to maximally preserve their area for grain through a transfer from the fodder to the grain group. A high effect in overseeding is obtained when it is carried out at the earliest time--with the first possibility of going out to the field--and when a sufficient depth of seed placement is ensured. If it is impossible to do this because of soil conditions, overall cultivation and resowing with spring crops at a full seeding rate should be carried out. Preference should be given to corn, millet, buckwheat and barley. When the death of winter crops is caused by blights, it is advisable to use stubble seeders.

It is also necessary to attach special significance to the performance of a set of operations connected with the control of weeds, diseases and pests on the winter field. Herbicides should be fully and promptly utilized. To increase their effectiveness, it is necessary to widely use the method of small volume spraying and adding ammonium nitrate to herbicides.

Spring grain crops. In the current year it is necessary to do everything that is possible to expand the areas sown with peas, vetch, lupin, barley and oats and to fully and efficiently utilize their available seeds for this. The areas of pulse crops should be increased at the expense of some of the seeds intended for the sowing of mixtures. This will contribute to the solution of the problem of balancing concentrated fodder in terms of protein and of fully providing farms with seeds for next year. An economical expenditure of seeds is attained when a set of operations connected with an increase in their field germination (good cleaning, careful treatment, air and thermal heating, field leveling before sowing, adjustment of seeders and so forth) are performed. It is very important to ensure the maximum coefficient of reproduction of seeds of newly regionalized and scarce pea varieties, especially nonshattering varieties, using purposeful agricultural technology in seed crops.

An increase in the proportion of grain fodder crops is justified and necessary in Siberia and Kazakhstan. This will contribute not only to an increase in the gross output of grain, but also to a reduction in the weediness of fields and lessening of tension during the harvesting period. However, such tactics should not have a negative effect on the production of strong and durum wheat. The mastering of crop rotations, placement of wheat only on the better predecessors (clean fallow, second crop after it and row crops) and rise in the level of agricultural technology are the potentials whose utilization will make it possible to avoid a decrease in the output of high-quality food grain. At the same time, the production of such grain will have to be increased in the Trans-Volga area, the south of the Urals, Siberia and North Kazakhstan.

There are certain difficulties with the supply of local seeds of grain fodder crops in the nonchernozem zone. In a number of cases they did not ripen physiologically. During the spring period it is possible to increase the germination of such seeds, subjecting them to air and thermal heating on drying units and active ventilation installations. In order to prevent the sowing of nonlocal seeds next year, it is necessary to take measures to reproduce the regionalized and, primarily, early ripening barley varieties of the "otra" type, which ripen before the bad fall weather.

Special significance in the increase in the production of fodder grain during the new five-year plan is attached to corn. In the current year the industrial technology of its cultivation will be used on 70 percent of the area allocated for this crop. Large funds have been allocated. The duty of farmers is to obtain an appropriate return and to increase the grain harvest by no less than 16 to 20 quintals per hectare. Such an increase can be attained only with an accurate fulfillment of all the elements of this technology and the strictest observance of technological discipline. As yet the number of seeds of quickly and early ripening hybrids is limited, but they are fully sufficient to sow the area with hybrids that are guaranteed to ripen in all zones not only within the limits of the plan. It is even possible to expand the areas sown with corn for grain and for this it will be necessary to correctly distribute seeds and to establish an effective control over their utilization.

Sorghum is the most productive crop in a number of arid regions. The availability of seeds makes it now possible to expand its sown areas and to ensure an increase in the production of sorghum grain and seeds for sowing for fodder purposes in future years.

Now let us discuss such an acute problem in grain farming as an increase in the production of hulled crops. It is advisable to expand the areas sown with them, because this year there are favorable conditions for this. Nor must we forget the fuller utilization of the possibility of repeated sowing of buckwheat on irrigated land and the use of the wide-row method of sowing ensuring a better control of weeds and an economy of seeds. In brief, it is necessary to do everything to attain a fundamental change in the production of millet and buckwheat at the beginning of the five-year plan, especially in Kazakhstan, the Volga area and the Urals. At the same time, it is necessary to take measures to increase the production of lentils and beans.

Oil bearing crops. Managers and specialists of agricultural bodies, kolkhozes and sovkhozes should change their attitude toward sunflowers and other oil bearing crops and improve the agricultural technology of their cultivation. The point is that oil bearing crops have a special place in the food program. They meet the need for relatively cheap edible vegetable oil and provide animal husbandry with fodder protein.

Primary attention should be drawn to the preservation of all the areas sown with oil bearing crops and their utilization according to direct purpose. The resources of seeds make it possible to expand the areas sown with sunflowers in regions traditional for this crop without disturbing crop rotations by leveling out and saturating crop rotations among kolkhozes and sovkhozes with them.

The seeds available on kolkhozes and sovkhozes and in state resources make it possible to expand the areas sown with such a valuable crop as rape. However, this can be done only if farm managers and specialists, especially in eastern regions, are imbued with a sense of responsibility for the solution of the protein problem. Without belittling the importance of rape as valuable green fodder, its sowing for oil bearing seeds should not be forgotten. The establishment of a new zone for the production of soybeans in the country's European part should be continued.

From the first days of spring the most serious attention should be paid to a rise in the level of agricultural technology of cultivation of oil bearing crops and observance of technological discipline. It is no secret: In the last few years the yield of sunflowers has decreased owing to the mass spread of sclerotinosis and grey mold, as well as late ripening. The accumulation of the infectious principle has increased and some of the seeds have a latent form of diseases and a low vital force. This requires technology built with due regard for the maximum decrease in the harmfulness of these diseases. In the northern and eastern regions of sunflower cultivation the varietal composition needs to be improved considerably.

A further expansion of the scale of introduction of individual technologies of cultivation of sunflowers, soybeans and castor oil plants should become the characteristic feature of the year. However, ordinary mechanized technologies without herbicides will be used on significant areas. Here the success of this work is largely determined by the optimum time and quality of performance of operations. Each field should be prepared and sown in 1 day. This is possible only if widecut units for the preparation of soil, sowing and their care are formed on farms at the base of energy saturated tractors. Shortening the time of performance of work to a minimum will reduce the unproductive expenditure of moisture and will ensure a good and uniform development of plants.

Characteristics of soil preparation and sowing. The condition of soil, the existence of reserves of moisture and nutritive substances in it and the meteorological situation in the country's zones are not the same. This requires from the agronomical service a differentiated approach to every field and operative corrections depending on the existing situation.

In the steppe and forest-steppe zones of the country's European part on many fields plowing for winter fallow was done under the conditions of waterlogged and overcompact soil. At the same time, the fall promoted the development of perennial and annual weeds and windfall. Warm winter and early spring are conducive to their growth. This means that specialists must pay close attention to cleaning fields from weedy vegetation during the presowing period. There are now all the possibilities for this and they should be utilized, not relying only on chemical measures of control during the period of vegetation of crops, which should be considered only supplementary. The following should be kept in mind. Last year, because of weather conditions, in a number of places it was not possible to promptly treat crops with herbicides and their effectiveness proved to be very low.

Spring agricultural technology should also envisage the maximum retention of soil moisture, whose reserves, basically, are good. Nevertheless, it is important to promptly and carefully level out the surface of fields and avoid a gap between presowing cultivation and sowing. Smoothing and postsowing packing should be used more widely.

Special attention should be paid to spring sowing in the nonchernozem zone, whose volumes have increased in connection with the insufficient sowing of winter crops. Furthermore, on many farms large areas have not been plowed for winter fallow. Nor should the fact that soil is overlogged and the density and weediness of fields are high be disregarded. In order to shorten the time of work, surface cultivation at the depth of 8 to 12 cm by means of disc harrows and share scufflers can be used there for grain crops and annual grass after row crops and peas on soil light in its mechanical composition in the absence of perennial weeds. This will make it possible to begin sowing 4 or 5 days earlier. However, in most cases a quality dressing of soil can be attained only with moldboard plowing.

The use of harrows and, in dry weather, of rollers before sowing is effective for leveling out and compacting a freshly cultivated field. RVK-3 and RVK-3,6 combined units proved their value in the presowing cultivation of soil in the zone. There is a shortage of these machines and, therefore, it is necessary to take measures for their highly productive utilization.

In the country's eastern regions field work now begins earlier than the average date in many years. This prolongs the spring presowing period and increases the probability of moisture evaporation. Therefore, the complex of soil preparation for spring crops should be directed toward the maximum retention of moisture and provision of good sprouts. This can be attained by covering it during the first 2 or 3 days when soil ripens. On a subsurface field for winter fallow moisture is covered by BIG-3 harrows and on fields not cultivated since the fall, by disc tillers with mandatory packing or by spikers.

On areas clear of weeds it is advisable to sow with SZS-2,1 seeders without preliminary presowing cultivation. Presowing cultivation is mandatory when fields are infested with wild oats and Tatar buckwheat and under crops sown at a late date. It is done at the same time as sowing. It is not recommended to make intermediary cultivations before the beginning of sowing. At that time it is better to destroy weeds with herbicides.

Plots not prepared for fall plowing should be cultivated in a differentiated way.

The seeding rate and the depth of seed placement are corrected with due regard for soil moisture and periods of sowing. Under the conditions of insufficient reserves of soil moisture seeding rates should not be too high, but, at the same time, crops should not be thinned out.

A stable increase in the gross output of grain remains the central task on all of the country's kolkhozes and sovkhozes. A great deal has already been done to solve it--a great deal, but not everything. Therefore, it is necessary to direct all organizational work toward a rise in the standard of every field and of farming as a whole, a prompt and quality performance of field work and a more rational and effective utilization of equipment and organic and mineral fertilizers. It is necessary to apply all the increased mineral fertilizers received on farms to grain crops and to obtain the greatest recovery of every kilogram through the harvest.

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